

Medium  
~~HIGH~~ CAVEKARST

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

R-111-POTASH  
OCD Artesia

FORM APPROVED  
OMB No. 1004-0137  
Expires July 31, 2010

14-727  
tes  
10814

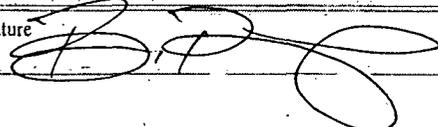
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No. Forty Niner Ridge Unit, NM70951X	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. Forty Niner Ridge Unit 103H <350090>	
2. Name of Operator Mewbourne Oil Company		9. API Well No. 30-015-42708	
3a. Address PO Box 5270 Hobbs, NM 88241	3b. Phone No. (include area code) 575-393-5905	10. Field and Pool, or Exploratory Forty Niner Ridge Bone Spring <24720>	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 630' FSL & 1584' FEL, Sec 22 T23S R30E At proposed prod. zone 330' FNL & 1980' FEL Sec 15 T23S R30E		11. Sec., T. R. M. or Blk. and Survey or Area Sec 22 T23S R30E	
14. Distance in miles and direction from nearest town or post office* 15 miles SE of Loving, NM		12. County or Parish Eddy	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330'	16. No. of acres in lease NMNM0543748 - 240 acres NMNM0531277-320 acres	17. Spacing Unit dedicated to this well 320 acres	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 620'- FORTY NINER RIDGE UNIT #006	19. Proposed Depth 19,208.9'-MD 9,756.0' -TVD	20. BLM/BIA Bond No. on file NM-1693 nationwide, NMB-000919	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3261'	22. Approximate date work will start* 06/03/2014	23. Estimated duration .65 days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
- Operator certification
- Such other site specific information and/or plans as may be required by the BLM.

25. Signature 	Name (Printed/Typed) BRADLEY BISHOP	Date 6-3-14
---	--	----------------

Approved by (Signature) Steve Caffey	Name (Printed/Typed)	Date SEP 29 2014
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.  
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Continued on page 2)

\*(Instructions on page 2)

NM OIL CONSERVATION  
ARTESIA DISTRICT

OCT 03 2014

Carlsbad Controlled Water Basin

RECEIVED

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6151 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 B St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015-92708	<sup>2</sup> Pool Code 24720	<sup>3</sup> Pool Name Forty Niner Ridge Bone Spring
<sup>4</sup> Property Code 35090	<sup>5</sup> Property Name FORTY NINER RIDGE UNIT	
<sup>7</sup> OGRID No. 14744	<sup>8</sup> Operator Name MEWBOURNE OIL COMPANY	<sup>6</sup> Well Number 103H ✓
<sup>9</sup> Elevation 3261'		

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	22	23-S	30-E		630	SOUTH	1584	EAST	EDDY

<sup>11</sup> Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	15	23-S	30-E		330	NORTH	1980	EAST	EDDY

<sup>12</sup> Dedicated Acres 320	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
--------------------------------------	-------------------------------	----------------------------------	-------------------------

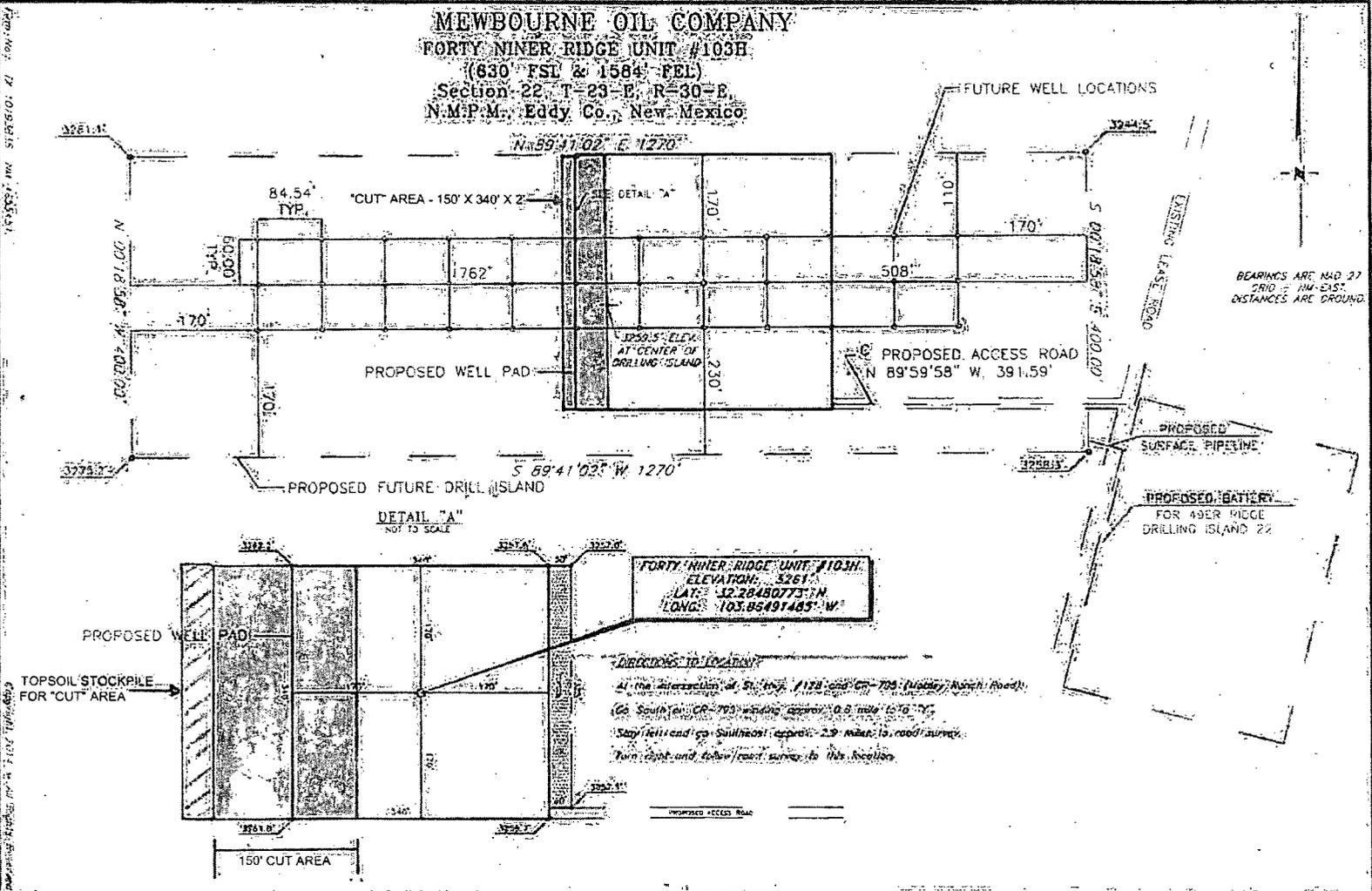
No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

	<p><b>GEODETTIC DATA</b> NAD 27 GRID - NM EAST</p> <p><b>SURFACE LOCATION</b> N 467646.4 E 644757.3</p> <p>LAT: 32.28480773° N LONG: 103.86491485° W</p> <p><b>CORNER DATA</b> NAD 27 GRID - NM EAST</p> <p>A: FND BRASS CAP 1942 N 466993.7 - E 640989.8</p> <p>B: FND BRASS CAP 1942 N 469643.1 - E 640968.7</p> <p>C: FND BRASS CAP 1942 N 472292.2 - E 640949.6</p> <p>D: FND BRASS CAP 1942 N 474941.7 - E 640944.6</p> <p>E: FND BRASS CAP 1942 N 474941.7 - E 640944.6</p> <p>F: FND BRASS CAP 1942 N 477590.1 - E 640939.2</p> <p>G: FND BRASS CAP 1942 N 477608.9 - E 646294.4</p> <p>H: FND BRASS CAP 1942 N 474963.3 - E 646296.7</p> <p>I: FND BRASS CAP 1942 N 472315.8 - E 646322.8</p> <p>J: FND BRASS CAP 1942 N 469670.9 - E 646322.8</p> <p>K: FND BRASS CAP 1942 N 467023.1 - E 646348.7</p> <p>L: FND BRASS CAP 1942 N 467008.3 - E 643669.3</p>	<p><b><sup>17</sup> OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and correct to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Bradley Bishop</i> 4-16-14 Signature Date</p> <p>BRADLEY BISHOP Printed Name</p> <p>E-mail Address</p>
		<p><b><sup>18</sup> SURVEYOR CERTIFICATION</b> I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>2/6/14 Date of Survey</p> <p><i>Robert M. Howett</i> Signature and Seal of Professional Surveyor</p> <p>19680 Certificate Number</p>



EXHIBIT "F"

**MEWBOURNE OIL COMPANY**  
**FORTY NINER RIDGE UNIT #103H**  
 (630' FSI & 1584' FEL)  
 Section 22, T-23-E, R-30-E,  
 N.M.P.M., Eddy Co., New Mexico



FORTY NINER RIDGE UNIT #103H  
 ELEVATION: 3261'  
 LAT: 32.264807731°N  
 LONG: 103.65491483°W

- DIRECTIONS TO LOCATION:**
- (1) At the intersection of S. 1st St., 1128' and CR-705 (Hobby Ranch Road).
  - (2) South on CR-705 a distance of approx. 0.8 mile to T-23.
  - (3) Turn left and go Southmost, approx. 2.9 miles to road survey.
  - (4) Turn right and follow road survey to this location.

NO.	REVISION	DATE

JOB NO.: LS140028  
 DWG. NO.: 140028-RADH

308 W. BROADWAY ST., HOPOS, NM 88240 (575) 964-8290

**RPC**

SCALE: 1" = 160'

DATE: 2/6/14

SURVEYED BY: BK/SM

DRAWN BY: AF

APPROVED BY: LWS

SHEET: 1 OF 1

# Drill Island Overview

## MEWBOURNE OIL COMPANY SURVEY OF THE PROPOSED 49ERS DRILLING ISLAND 22 SITUATED WITHIN THE SE 1/4, SECTION 22, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N. M. P. M., EDDY CO., N. M.

15 14  
22 23  
FND BRASS  
CAP "1942"

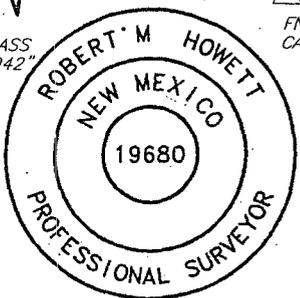
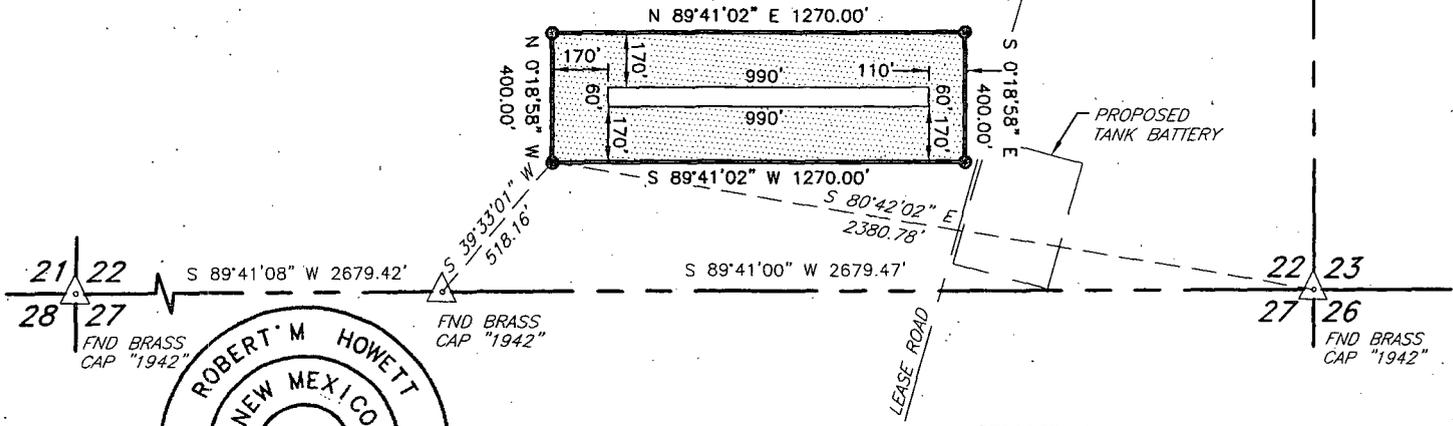


SCALE: 1" = 600'  
0 300 600

BEARINGS ARE NAD 27 GRID  
NM EAST & DISTANCES ARE  
HORIZ. GROUND.

### LEGEND

- FOUND CORNER AS NOTED
- SET 5/8" REBAR WITH A CAP MARKED "RPLS 19680"



I, ROBERT M. HOWETT, NEW MEXICO PROFESSIONAL SURVEYOR NO. 19680, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WAS PERFORMED UNDER MY DIRECT SUPERVISION AND THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN THE STATE OF NEW MEXICO AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

ROBERT M. HOWETT *Robert M. Howett*

DATE: 11/8/13

### DESCRIPTION

A TRACT OF LAND SITUATED WITHIN THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N. M. P. M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 5/8" REBAR WITH A CAP MARKED "RPLS 19680" SET FOR A CORNER FROM WHICH A BRASS CAP STAMPED "1942" FOUND FOR THE SOUTH QUARTER CORNER OF SAID SECTION 22 BEARS S 39°33'01" W, 518.16 FEET AND A BRASS CAP STAMPED "1942" FOUND FOR THE SOUTHEAST CORNER OF SAID SECTION 22 BEARS S 80°42'02" E, 2,380.78 FEET;

THENCE N 00°18'58" W, 400.00 FEET TO A 5/8" REBAR WITH A CAP MARKED "RPLS 19680" SET FOR A CORNER;

THENCE N 89°41'02" E, 1,270.00 FEET TO A 5/8" REBAR WITH A CAP MARKED "RPLS 19680" SET FOR A CORNER;

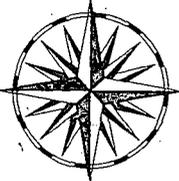
THENCE S 00°18'58" E, 400.00 FEET TO A 5/8" REBAR WITH A CAP MARKED "RPLS 19680" SET FOR A CORNER;

THENCE S 89°41'02" W, 1,270.00 FEET TO THE POINT OF BEGINNING.

SAID TRACT OF LAND CONTAINING 508,000 SQUARE FEET OR 11.662 ACRES, MORE OR LESS.

Copyright 2012 - All Rights Reserved

PROSPERITY CONSULTANTS, LLC



SCALE: 1"=600'

DATE: 11-13-13

SURVEYED BY: GB/IE

DRAWN BY: JC

APPROVED BY: LWB

SHEET : 1 OF 1

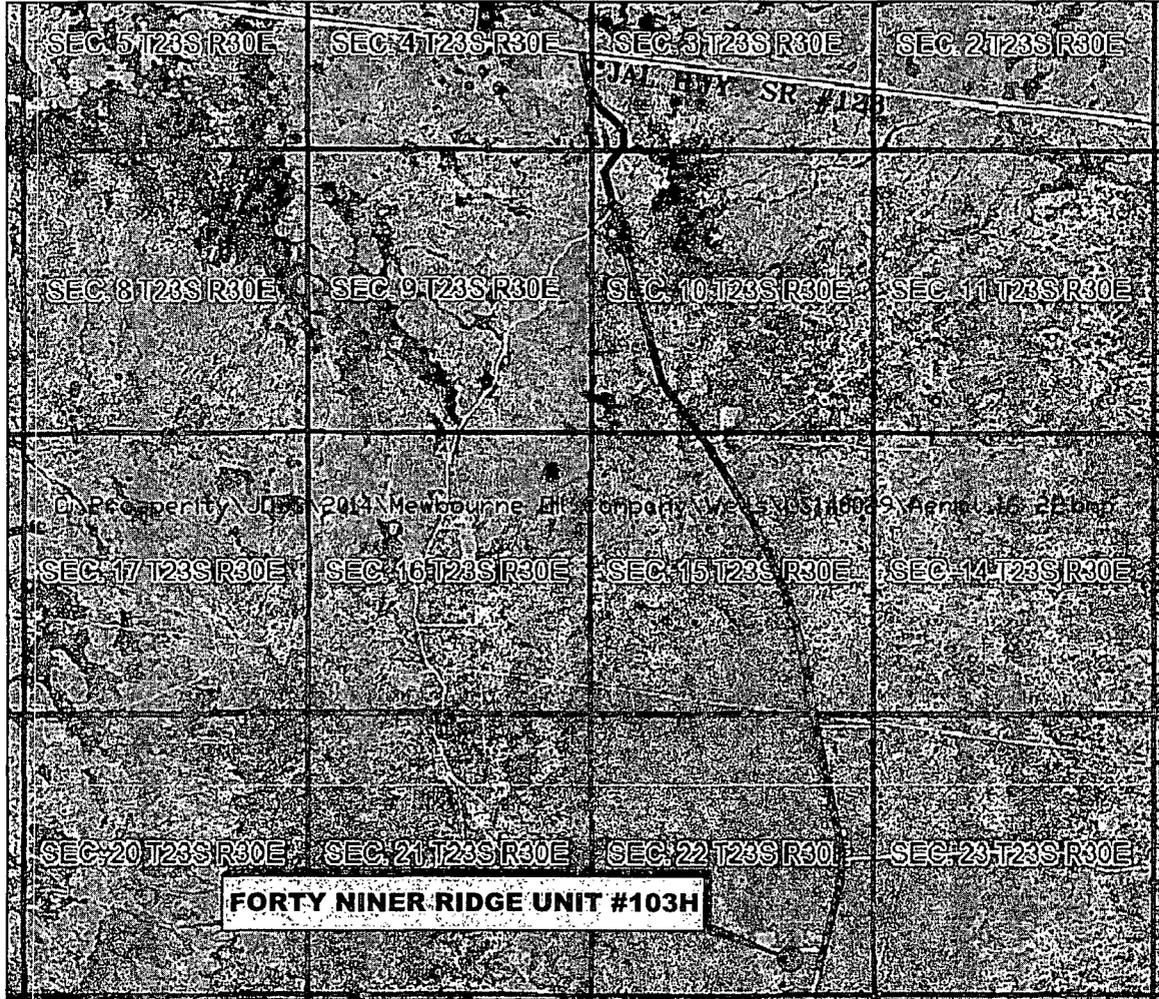
NO.	REVISION	DATE
JOB NO.: LS130353		
DWG. NO.: 130353		

2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

# VICINITY MAP

NOT TO SCALE



*SECTION 22, TWP. 23 SOUTH, RGE. 30 EAST,  
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: Mewbourne Oil Company  
 LEASE: Forty Niner Ridge Unit  
 WELL NO.: 103H

LOCATION: 630' FSL & 1584' FEL  
 ELEVATION: 3261'

*Copyright 2013 - All Rights Reserved*

NO.	REVISION	DATE
JOB NO.: LS140028		
DWG. NO.: 140028VM		

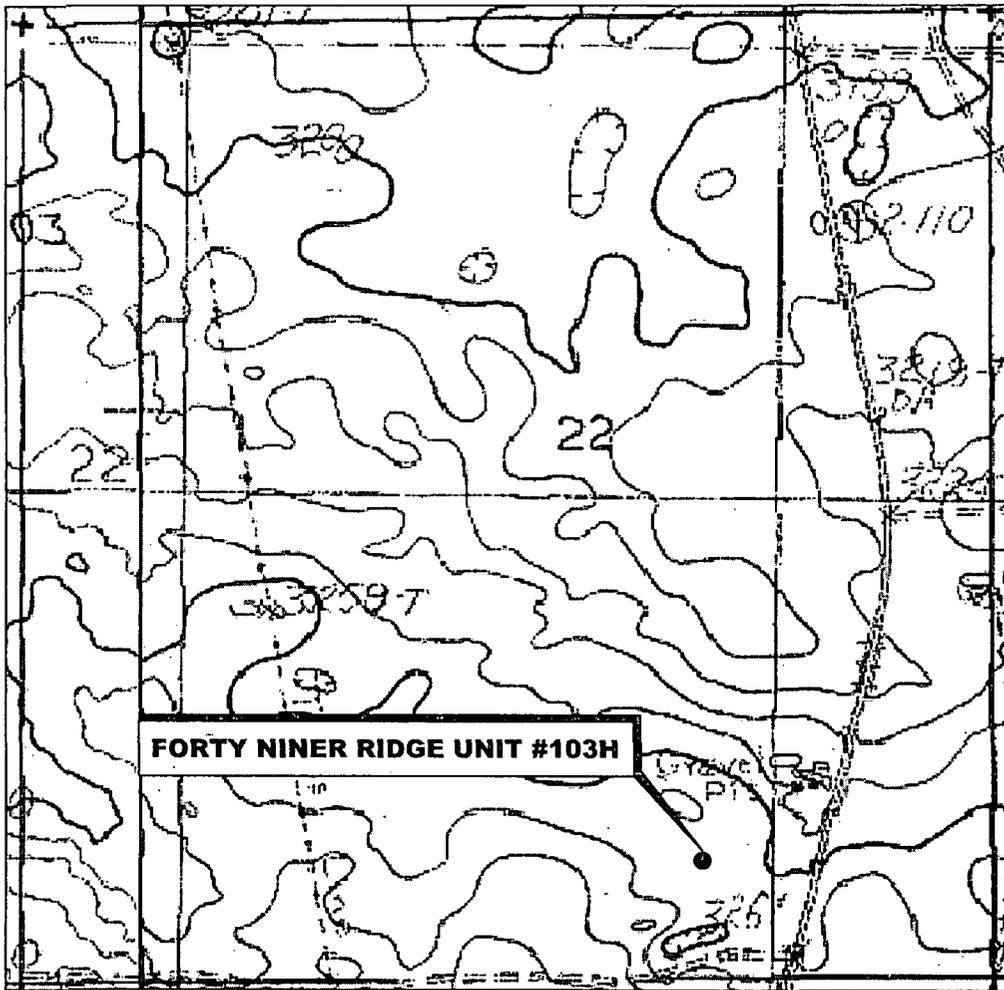
PROSPERITY CONSULTANTS, LLC



308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: N.T.S.
DATE: 2/6/14
SURVEYED BY: BK/SM
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

# LOCATION VERIFICATION MAP



*SECTION 22, TWP. 23 SOUTH, RGE. 30 EAST,  
N. M. P. M., EDDY COUNTY, NEW MEXICO*

OPERATOR: Mewbourne Oil Company  
 LEASE: Forty Niner Ridge Unit  
 WELL NO.: 103H  
 ELEVATION: 3261'

LOCATION: 630' FSL & 1584' FEL  
 CONTOUR INTERVAL: 10'  
 USGS TOPO. SOURCE MAP:  
Illinois Camp NE, NM (Prov. Ed. 1985)

*Copyright 2013 - All Rights Reserved*

NO.	REVISION	DATE
JOB NO.: LS140028		
DWG. NO.: 140028LVM		

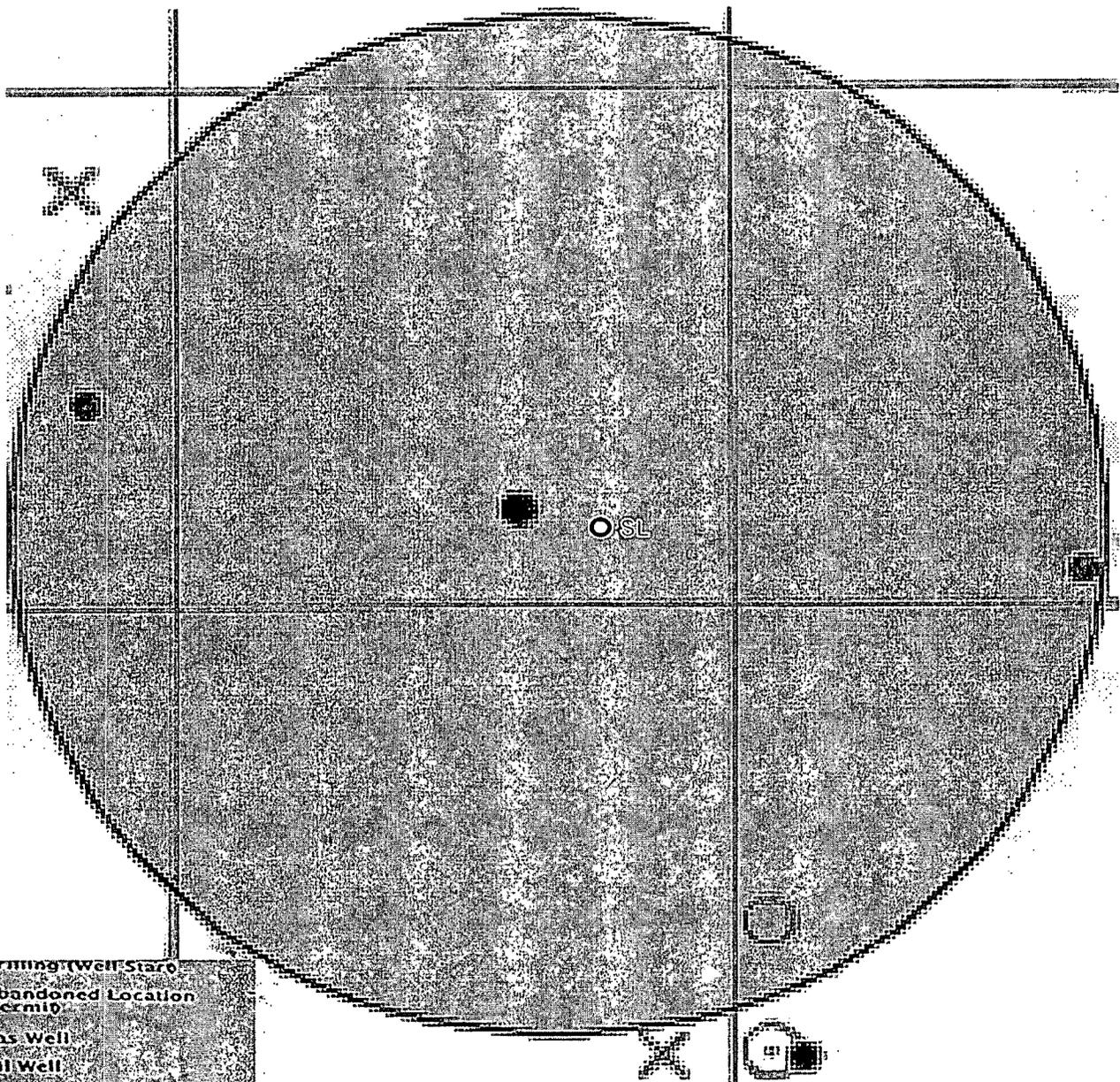
PROSPERITY CONSULTANTS, LLC



308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: 1"=1000'  
 DATE: 2/6/14  
 SURVEYED BY: BK/SM  
 DRAWN BY: AF  
 APPROVED BY: LWB  
 SHEET : 1 OF 1

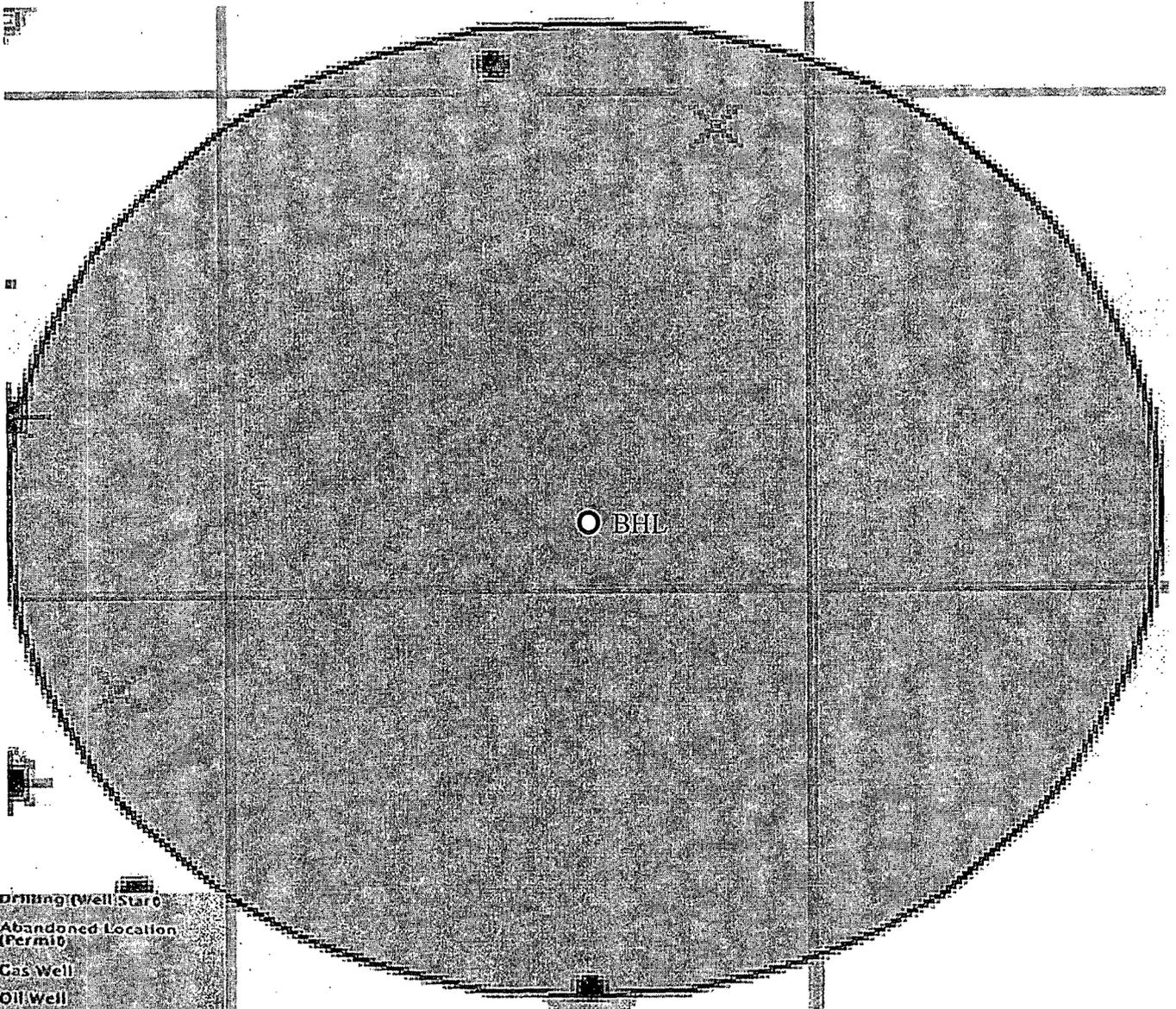
Exhibit 4



- Drilling (Well Start)
- ✕ Abandoned Location (Permit)
- Gas Well
- Oil Well
- ✱ Oil and Gas Well
- Other (Observation, etc)
- Injection Well
- Suspended
- ✕ Plugged Gas Well
- ✕ Plugged Oil Well
- ✕ Plugged Oil and Gas
- ◇ Dry Hole (No Shows)
- ◇ Dry Hole w/Gas Show
- ◇ Dry Hole w/Oil Show
- ◇ Dry Hole w/Oil and Gas Show

Surface Location  
 Forty Niner Ridge Unit 103H  
 Sec 22 T23S R29E

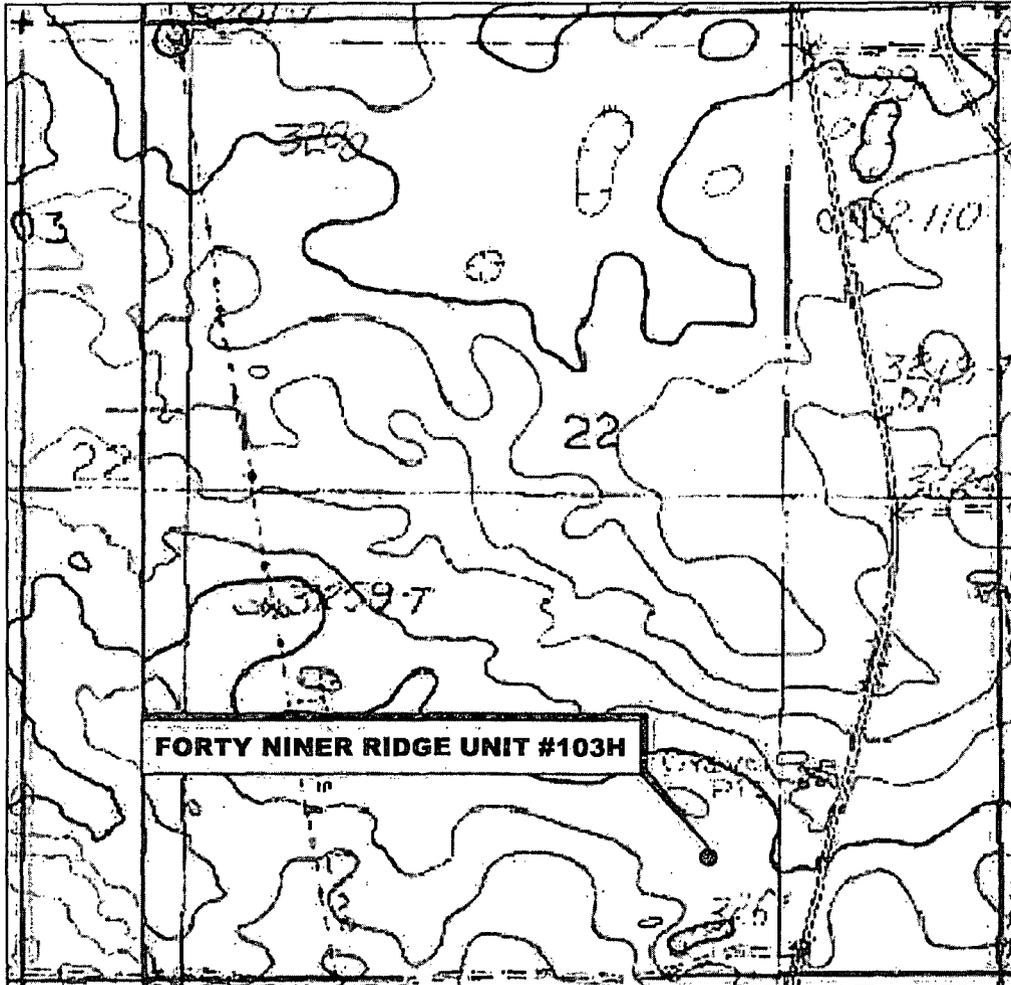
Exhibit "4A"



- Drilling (Well Start)
- ✕ Abandoned Location (Permit)
- Gas Well
- Oil Well
- ★ Oil and Gas Well
- Other (Observation, etc)
- Injection Well
- Suspended
- ✕ Plugged Gas Well
- ✕ Plugged Oil Well
- ✕ Plugged Oil and Gas
- ◇ Dry Hole (No Shows)
- ◇ Dry Hole w/Gas Show
- ◇ Dry Hole w/Oil Show
- ◇ Dry Hole w/Oil and Gas Show

Bottom Hole Location  
Forty Niner Ridge Unit 103H  
Sec 15 T23S R30E

# LOCATION VERIFICATION MAP



**SECTION 22, TWP. 23 SOUTH, RGE. 30 EAST,  
N. M. P. M., EDDY COUNTY, NEW MEXICO**

OPERATOR: Mewbourne Oil Company  
 LEASE: Forty Niner Ridge Unit  
 WELL NO.: 103H  
 ELEVATION: 3261'

LOCATION: 630' FSL & 1584' FEL  
 CONTOUR INTERVAL: 10'  
 USGS TOPO. SOURCE MAP:  
Illinois Camp NE, NM (Prov. Ed. 1985)

Copyright 2013 - All Rights Reserved

NO.	REVISION	DATE
JOB NO.: LS140028		
DWG. NO.: 140028LVM		

PROSPERITY CONSULTANTS, LLC



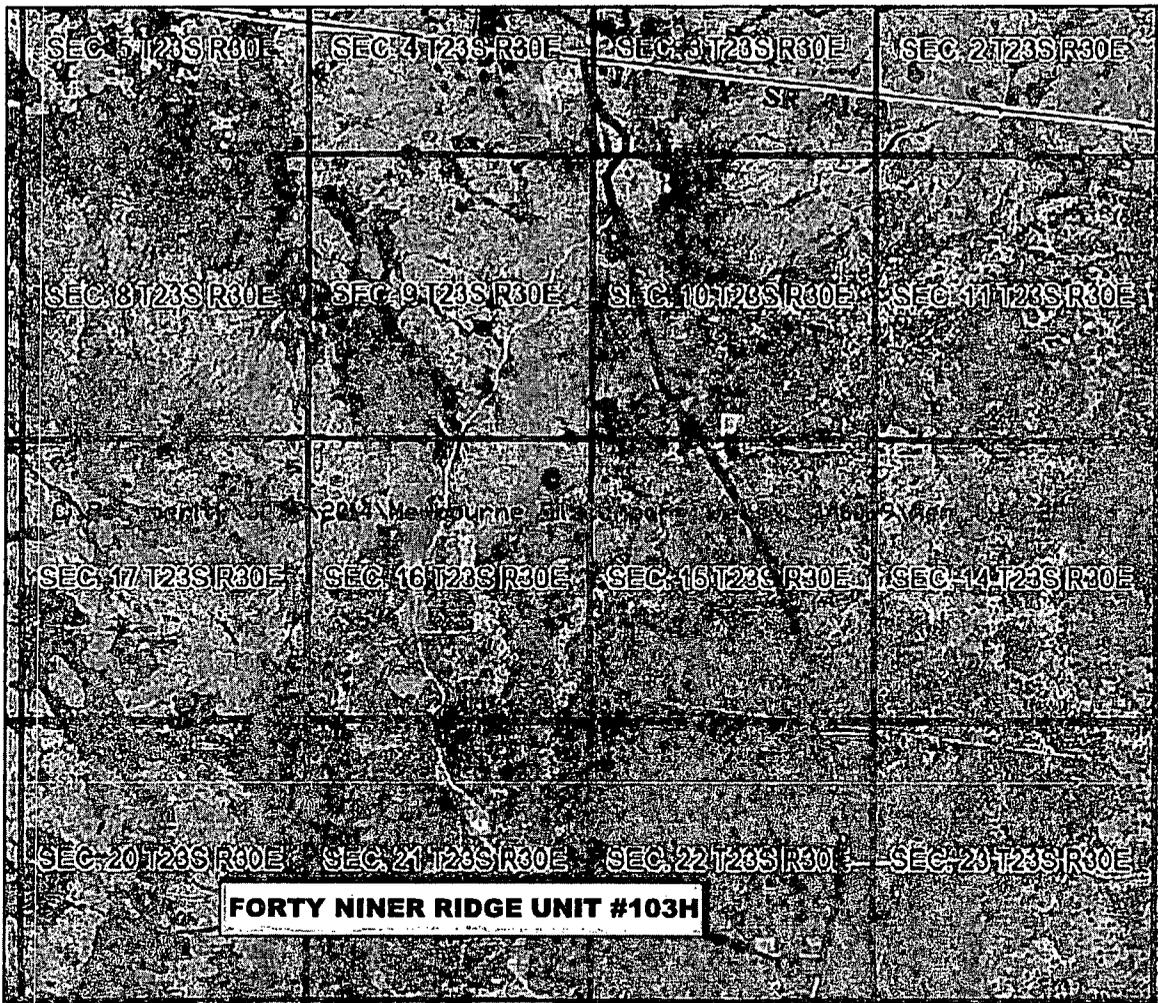
308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: 1"=1000'
DATE: 2/6/14
SURVEYED BY: BK/SM
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

Exhibit "A" Road Map

# VICINITY MAP

NOT TO SCALE



**SECTION 22, TWP. 23 SOUTH, RGE. 30 EAST,  
N. M. P. M., EDDY COUNTY, NEW MEXICO**

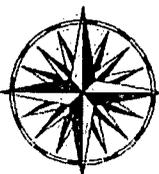
OPERATOR: Mewbourne Oil Company  
 LEASE: Forty Niner Ridge Unit  
 WELL NO.: 103H

LOCATION: 630' FSL & 1584' FEL  
 ELEVATION: 3261'

Copyright 2013 - All Rights Reserved

NO.	REVISION	DATE
JOB NO.: LS140028		
DWG. NO.: 140028VM		

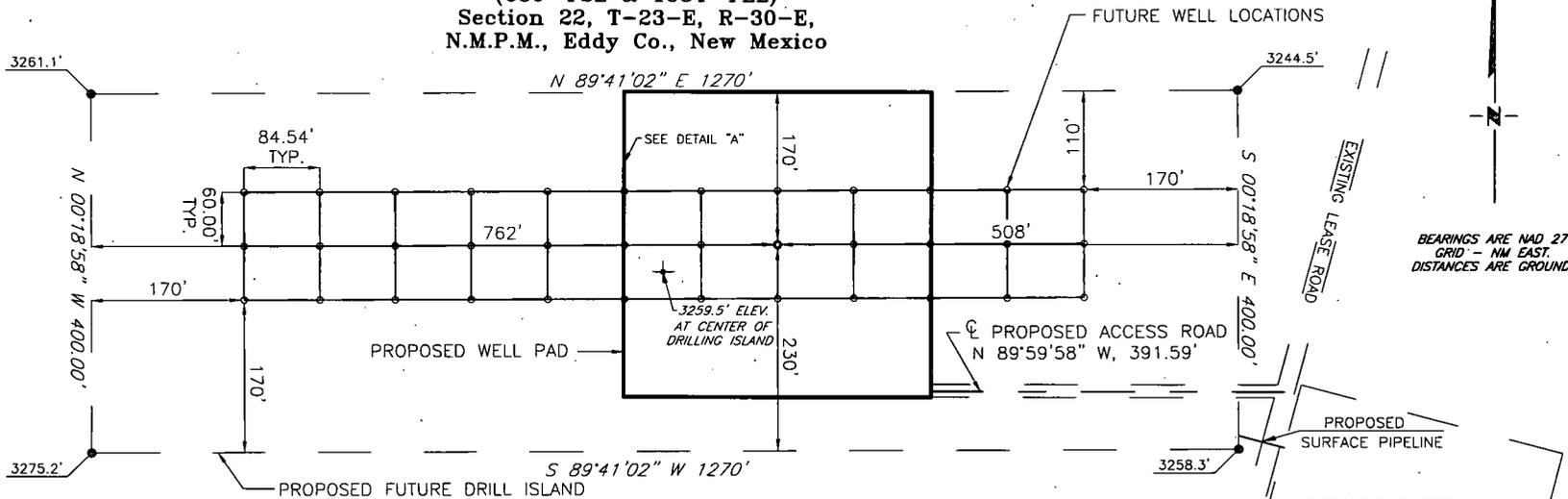
PROSPERITY CONSULTANTS, LLC



308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

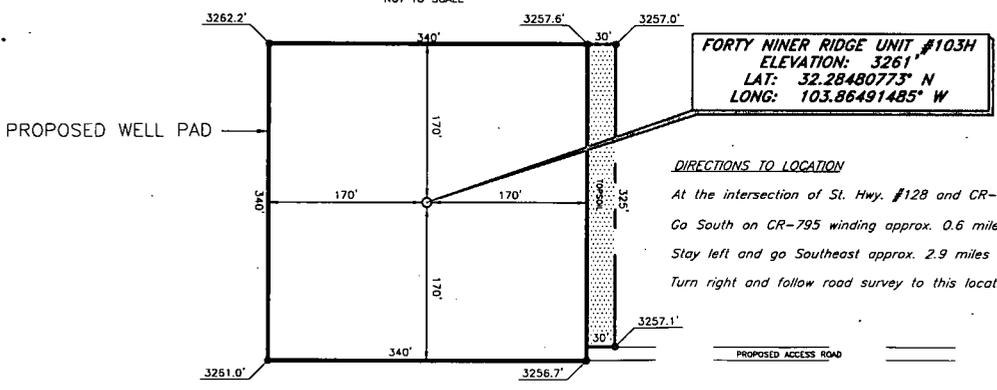
SCALE: N.T.S.
DATE: 2/6/14
SURVEYED BY: BK/SM
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

**MEWBOURNE OIL COMPANY**  
**FORTY NINER RIDGE UNIT #103H**  
**(630' FSL & 1584' FEL)**  
**Section 22, T-23-E, R-30-E,**  
**N.M.P.M., Eddy Co., New Mexico**



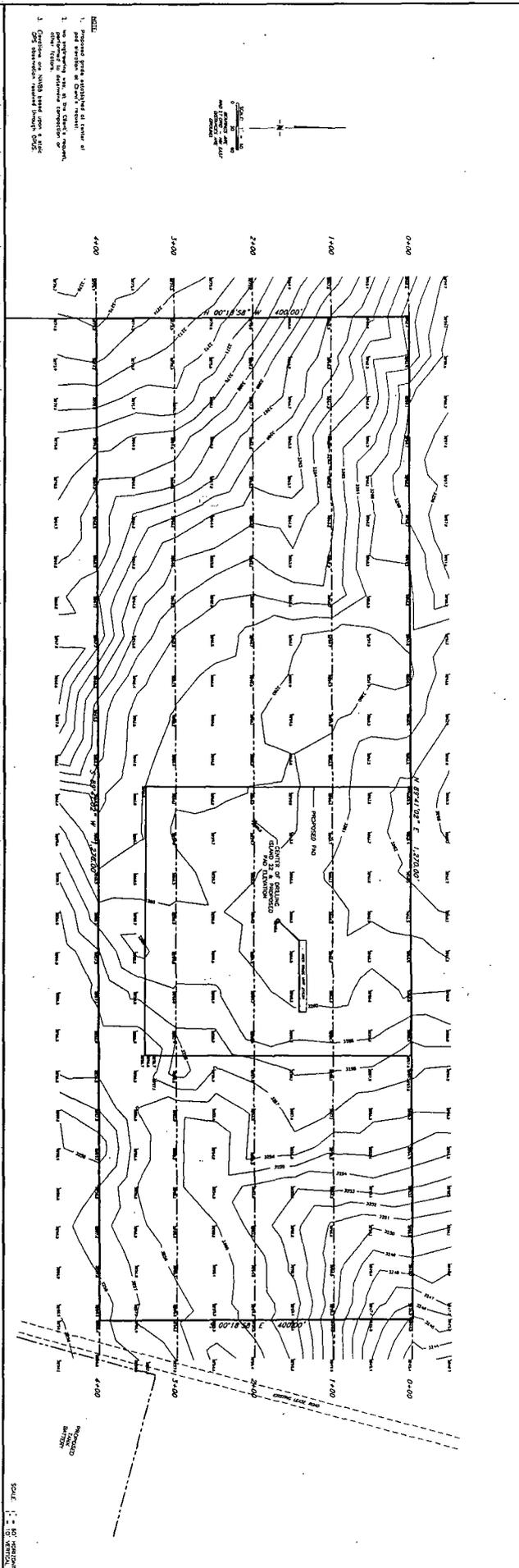
BEARINGS ARE NAD 27  
 GRID - NM EAST.  
 DISTANCES ARE GROUND.

**DETAIL "A"**  
 NOT TO SCALE



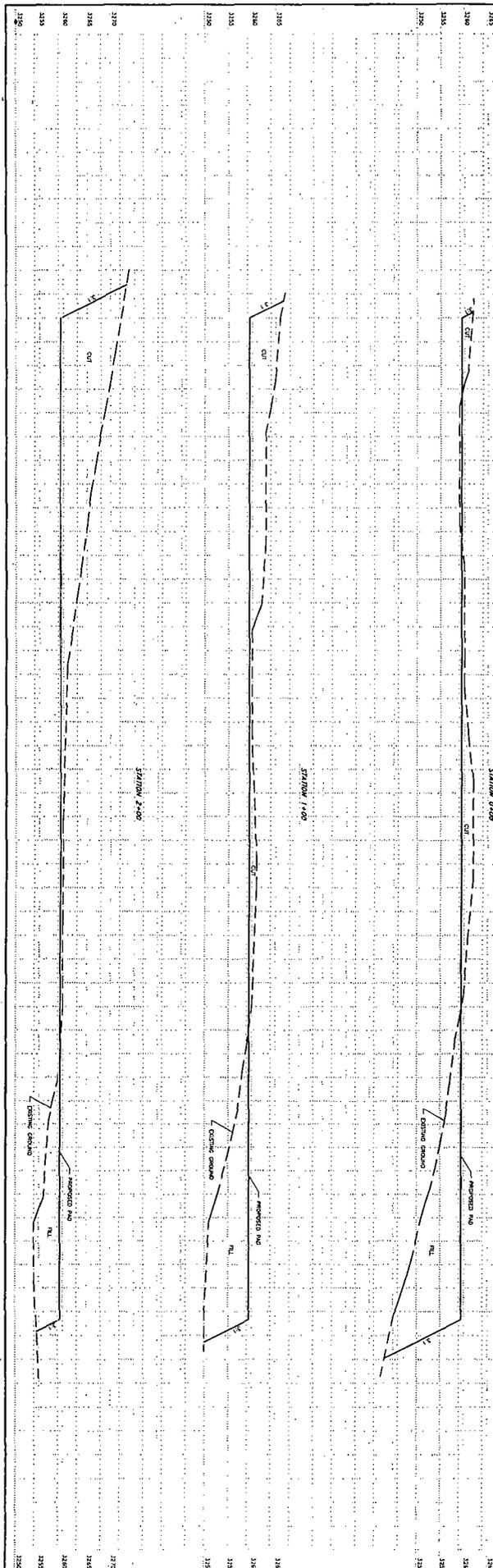
**DIRECTIONS TO LOCATION**  
 At the intersection of St. Hwy. #128 and CR-795 (Mabley Ranch Road):  
 Go South on CR-795 winding approx. 0.6 mile to a "Y".  
 Stay left and go Southeast approx. 2.9 miles to road survey.  
 Turn right and follow road survey to this location.

Form No.: TX 10193838 NM 4655451	<b>RPC</b>	NO.	REVISION	DATE
JOB NO.: LST140028				
DWG. NO.: 140028PADB				
308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200				
Copyright 2014 - All Rights Reserved		SCALE: 1" = 160'	DATE: 2/6/14	SURVEYED BY: BK/SM
			DRAWN BY: AF	APPROVED BY: LWB
				SHEET : 1 OF 1



Scale: 1" = 80' (VERTICAL)  
1" = 100' (HORIZONTAL)

NO.	REVISION	DATE	JOB NO.
1	100% PLAN	2/21/14	13140021
			13140021-1
		DATE: 2/21/14	
		SCALE: SEE ABOVE	
		SHEET: 1 OF 2	

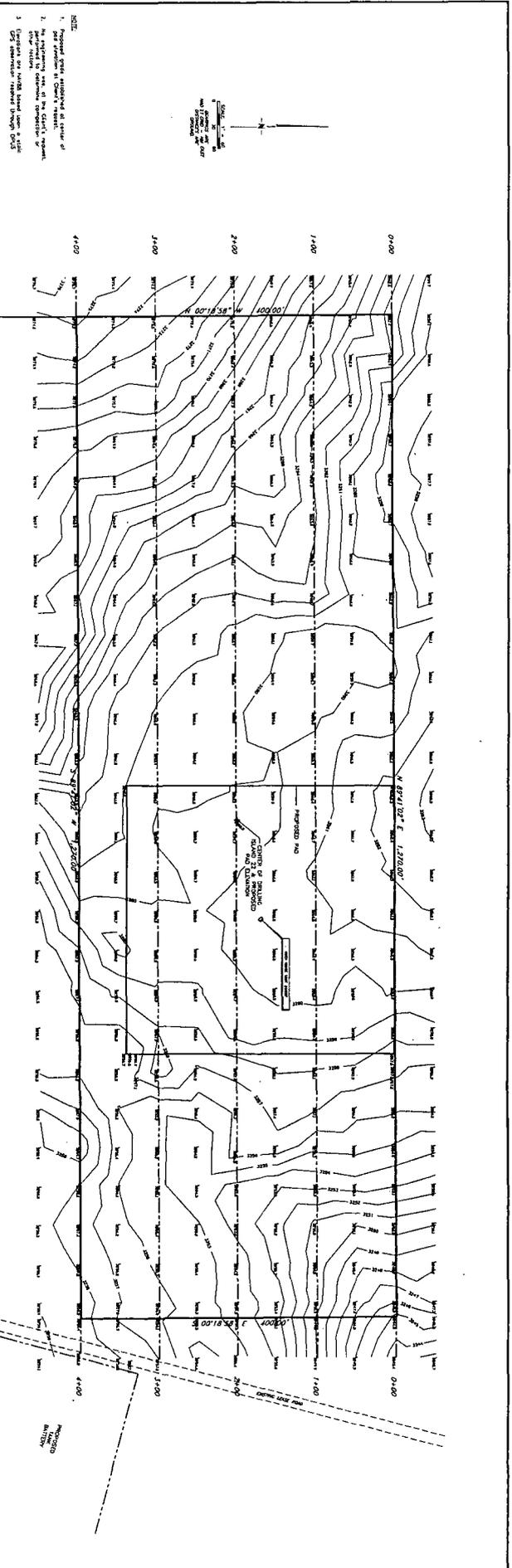


**RRC**

MEWBOURNE OIL COMPANY

Topographic Survey of Drilling Island 22  
situated within the SE 1/4 Sec. 22,  
Township 23 South, Range 30 East,  
N. M. P. M., Eddy County, N. M.

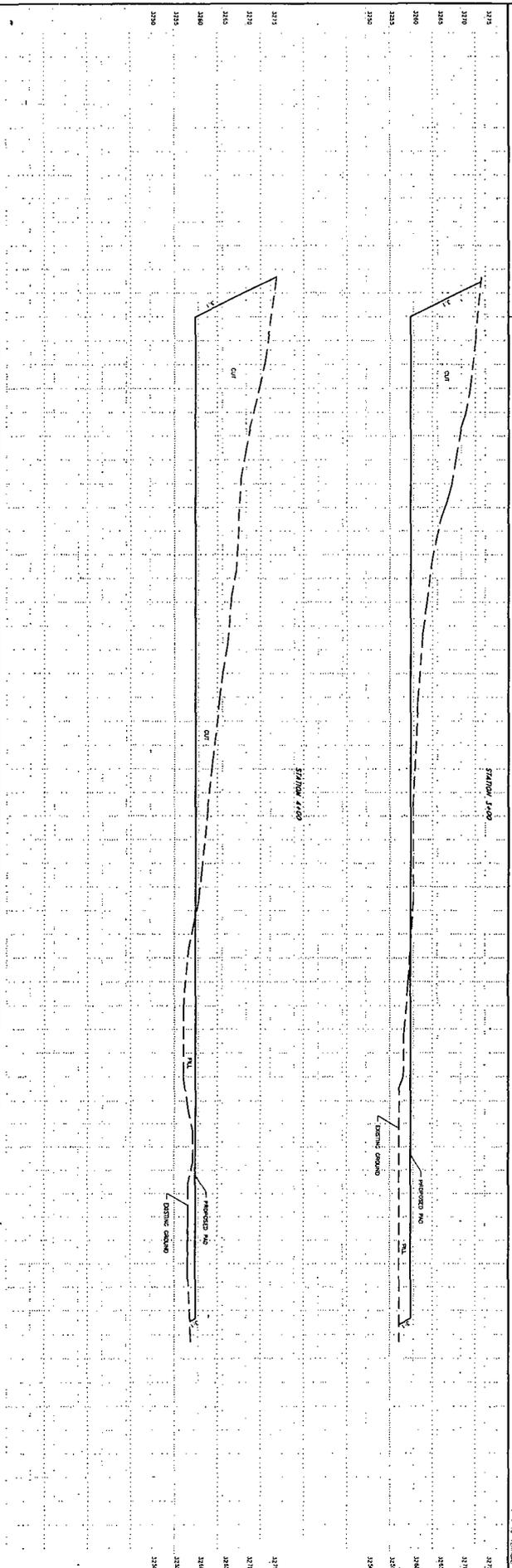
3801 DOME LANE, ROUND ROCK TEXAS 78684 (512) 991-1787



Copyright 2014 - All Rights Reserved

NO.	REVISION	DATE	JOB NO.
1	10/24/14	3/28/14	15140097
			DATE: 2/21/14
			SCALE: SEE ABOVE
			SHEET: 2 OF 2

Topographic Survey of Drilling Island 22  
 situated within the SE 1/4 Sec. 22,  
 Township 23 South, Range 30 East,  
 N. M. P. M., Eddy County, N. M.

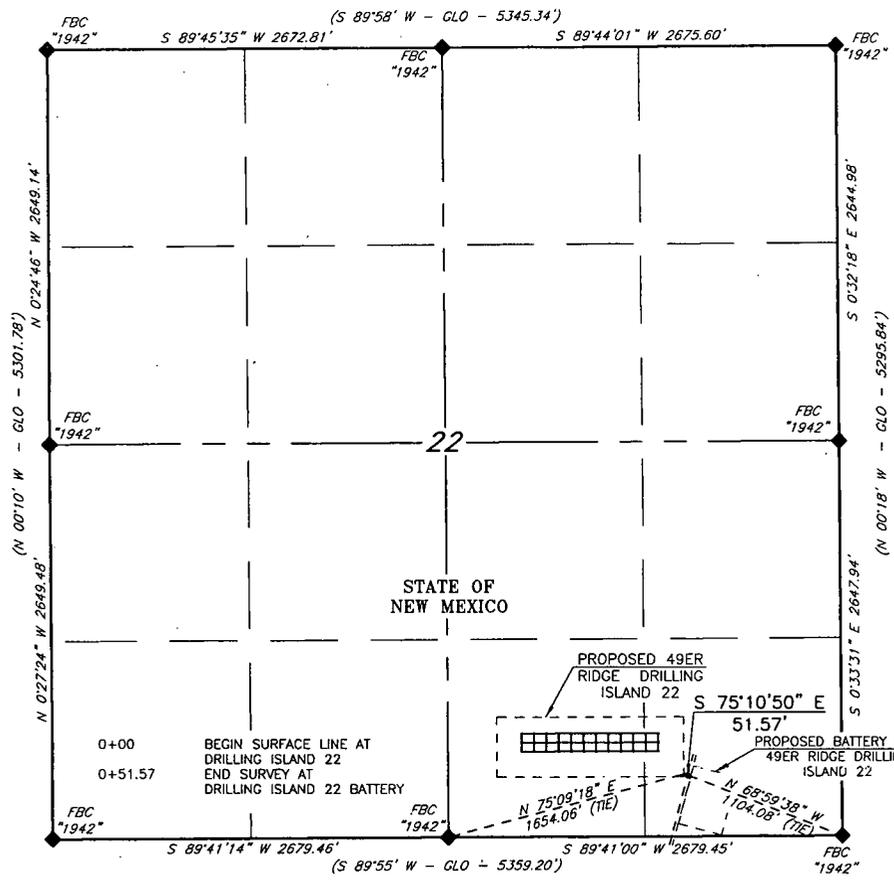


**RRC**  
 3401 DOWE LANE, ROUND ROCK, TEXAS 78664 (512) 991-5867

**MEWBOURNE OIL COMPANY**

APPENDIX "D" Flowline Route

MEWBOURNE OIL COMPANY  
 PROPOSED SURFACE LINE FROM THE 49ER RIDGE DRILLING ISLAND 22  
 TO THE 49ER RIDGE DRILLING ISLAND 22 BATTERY  
 SECTION 22, T23S, R30E, N.M.P.M., EDDY CO., N.M.



DESCRIPTION

A strip of land being 30 feet wide, 51.57 feet or 3.125 rods in length lying in Section 22, Township 23 South, Range 30 East, N. M. P. M., Eddy County, New Mexico, being 15 feet left and 15 feet right of the following described survey of a centerline across State of New Mexico lands:

Beginning at Engr. Sta. 0+00, a point in the Southeast quarter of said Section 22, which bears N 75°09'18" E, 1654.06 feet from a found brass cap, stamped "1942, for the South quarter corner of said Section 22;

Thence S 75°10'50" E, 51.57 feet to Engr. Sta. 0+51.57 to the End of Survey, a point in the Southeast quarter of said Section 22, which bears N 68°59'38" W, 1104.08 feet from a found brass cap, stamped "1942", found for the Southeast corner of said Section 22.

Said strip of land contains 0.036 acres, more or less and is allocated by forties as follows:

SE ¼ SE ¼ 0.036 Acres

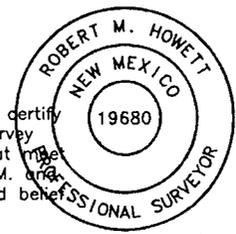
SCALE: 1" = 1000'  
 0 500 1000

BEARINGS: NAD 27 GRID-NM EAST  
 DISTANCES: HORIZ. GROUND

LEGEND  
 ( ) RECORD DATA  
 ◆ FBC\*\*\*\* FOUND BRASS CAP "YEAR"  
 — C/L PROPOSED SURFACE PIPELINE

I, R. M. Howett, a N. M. Professional Surveyor, hereby certify that this plat was prepared from an actual ground survey made under my direct supervision, said survey and plat meet the Min. Stds. for Land Surveying in the State of N. M. and are true and correct to the best of my knowledge and belief.

Robert M. Howett  
 Robert M. Howett NM PS 19680



Copyright 2013 - All Rights Reserved

NO.	REVISION	DATE
JOB NO.:	LS1400B9	
DWG. NO.:	140089SPL	

PROSPERITY CONSULTANTS, LLC

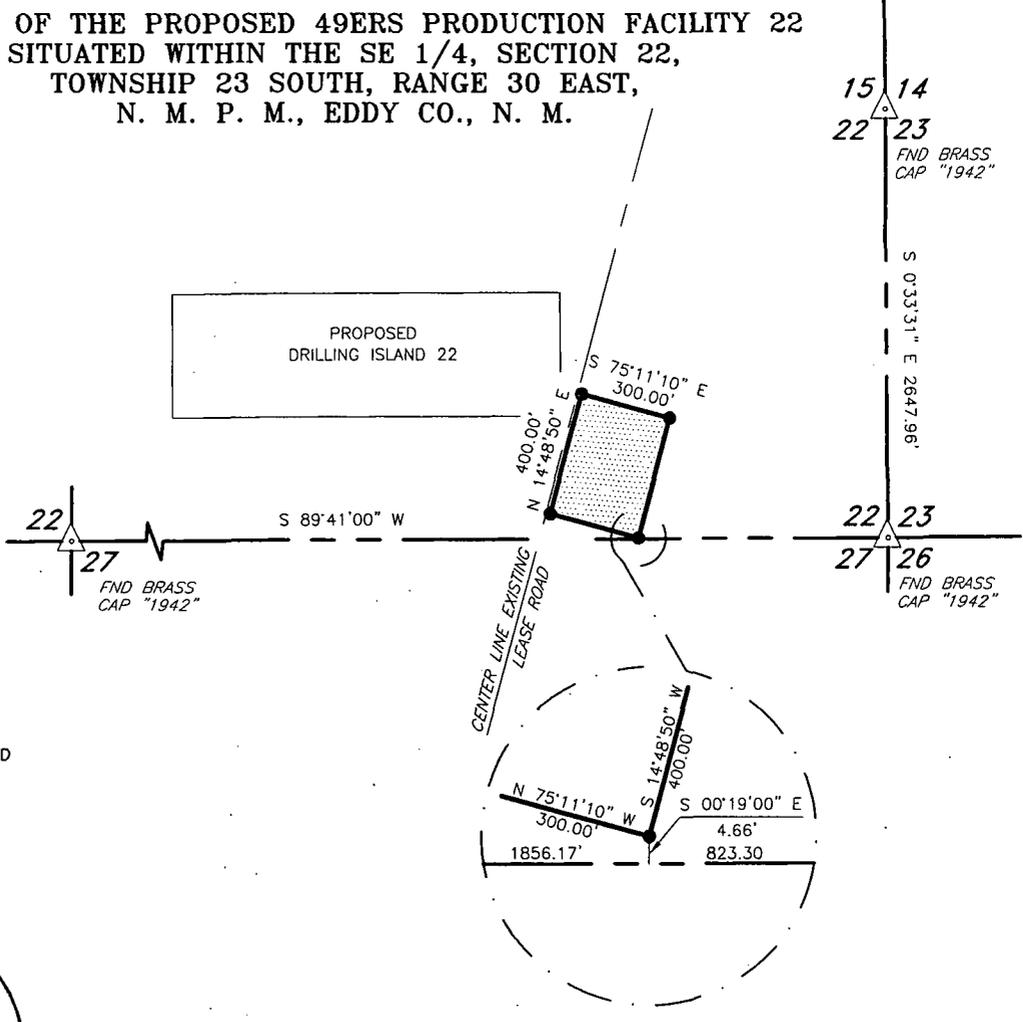
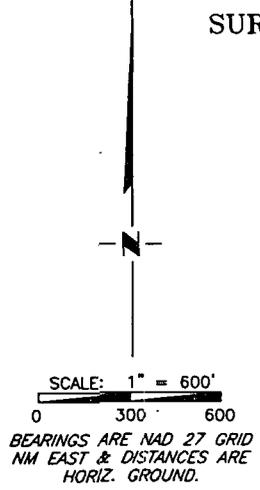


2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664 o (512) 992-2087 f (512) 251-2518

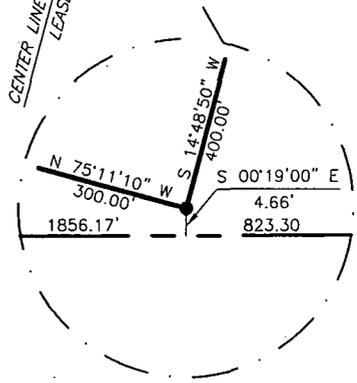
SCALE: 1"=1000'
DATE: 1/29/14
SURVEYED BY: GB/SM
DRAWN BY: AF
APPROVED BY: LWB
SHEET : 1 OF 1

EXHIBIT "E" Battery Site

**MEWBOURNE OIL COMPANY**  
**SURVEY OF THE PROPOSED 49ERS PRODUCTION FACILITY 22**  
**SITUATED WITHIN THE SE 1/4, SECTION 22,**  
**TOWNSHIP 23 SOUTH, RANGE 30 EAST,**  
**N. M. P. M., EDDY CO., N. M.**



**LEGEND**  
 △ FOUND CORNER AS NOTED  
 ● 5/8" REBAR WITH A CAP MARKED "RPLS 19680"



**DESCRIPTION**

A TRACT OF LAND SITUATED WITHIN THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 23 SOUTH, RANGE 30 EAST, N. M. P. M., EDDY COUNTY, NEW MEXICO AND BEING MORE PARTICULARLY DESCRIBED BY METES AND BOUNDS AS FOLLOWS:

BEGINNING AT A 5/8" REBAR WITH A CAP MARKED "RPLS 19680" SET FOR A CORNER FROM WHICH A BRASS CAP STAMPED "1942" FOUND FOR THE SOUTHEAST CORNER OF SAID SECTION 22 BEARS S 00°19'99" E, 4.66 FEET AND N 89°41'00" E, 823.30 FEET AND A BRASS CAP STAMPED "1942" FOUND FOR THE SOUTH QUARTER CORNER OF SAID SECTION 22 BEARS S 00°19'00" E, 4.66 FEET AND S 89°41'00" W, 1,856.17 FEET;

THENCE N 75°11'10" W, 300.00 FEET TO A 5/8" REBAR WITH A CAP MARKED "RPLS 19680" SET FOR A CORNER;

THENCE N 14°48'50" E, 400.00 FEET TO A 5/8" REBAR WITH A CAP MARKED "RPLS 19680" SET FOR A CORNER;

THENCE S 75°11'10" E, 300.00 FEET TO A 5/8" REBAR WITH A CAP MARKED "RPLS 19680" SET FOR A CORNER;

THENCE S 14°48'50" W, 400.00 FEET TO THE POINT OF BEGINNING.

SAID TRACT OF LAND CONTAINING 120,000 SQUARE FEET OR 2.755 ACRES, MORE OR LESS.

I, ROBERT M. HOWETT, NEW MEXICO PROFESSIONAL SURVEYOR NO. 19680, DO HEREBY CERTIFY THAT THIS SURVEY PLAT AND THE ACTUAL SURVEY ON THE GROUND UPON WHICH IT IS BASED WAS PERFORMED UNDER MY DIRECT SUPERVISION AND THIS SURVEY MEETS THE MINIMUM STANDARDS FOR SURVEYING IN THE STATE OF NEW MEXICO AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

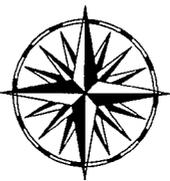
ROBERT M. HOWETT *Robert M. Howett*

DATE: 11/8/13

Copyright 2012 - All Rights Reserved

NO.	REVISION	DATE
JOB NO.: LS130462		
DWG. NO.: 130462		

PROSPERITY CONSULTANTS, LLC



2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664

o (512) 992-2087 f (512) 251-2518

SCALE: 1"=600'
DATE: 11-13-13
SURVEYED BY: GB/IE
DRAWN BY: JC
APPROVED BY: LWB
SHEET : 1 OF 1

Exhibit "E" battery site

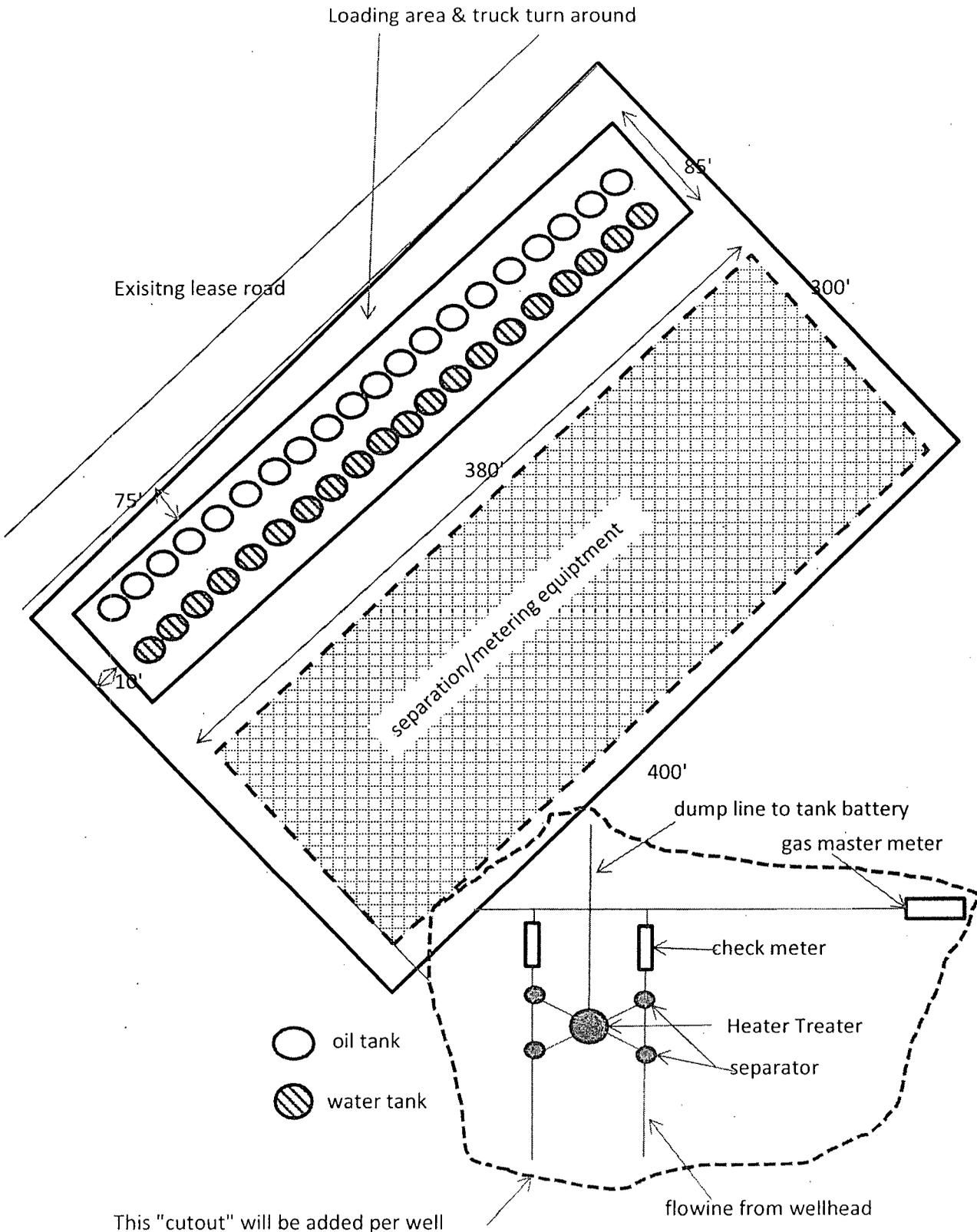
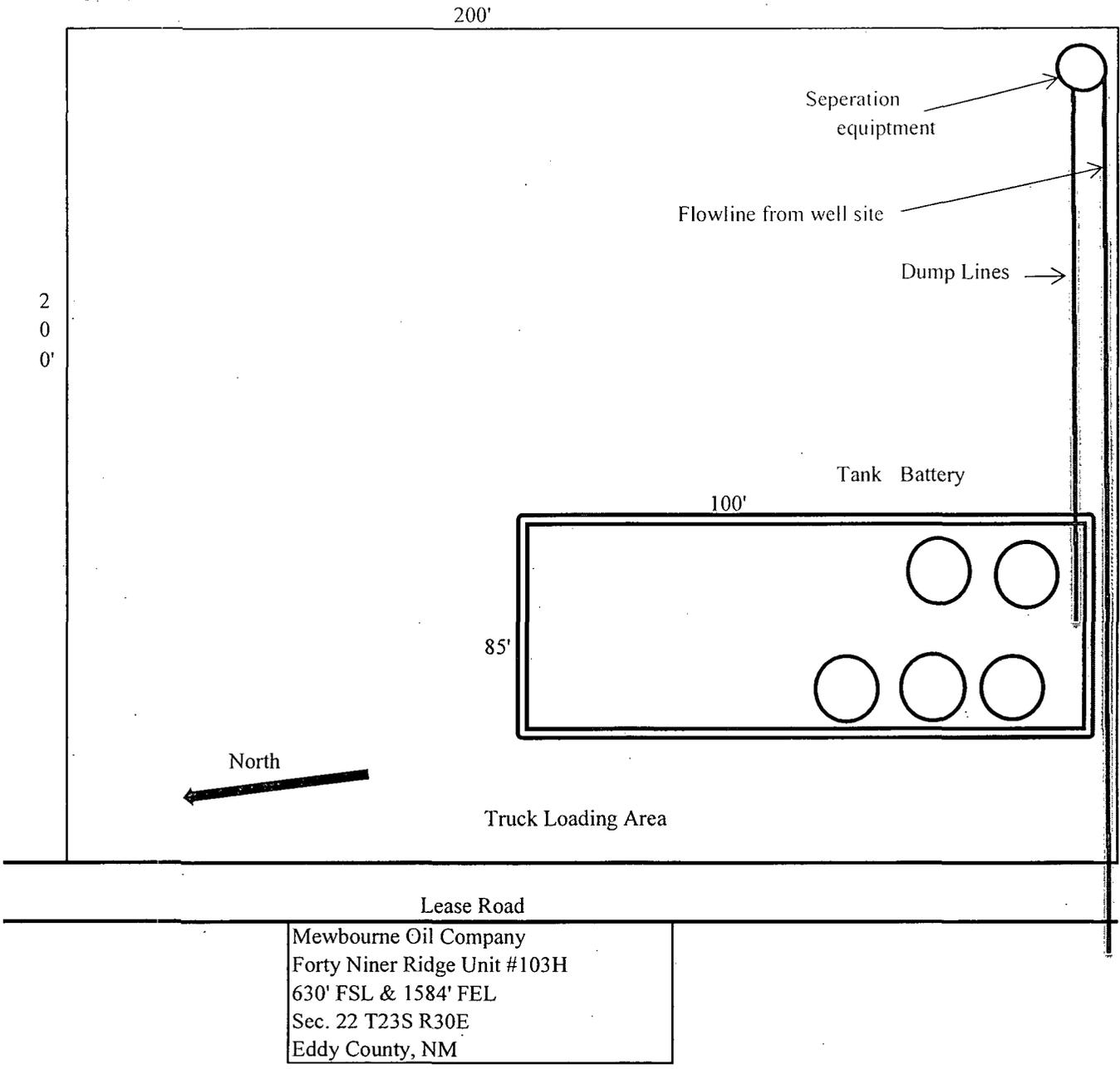
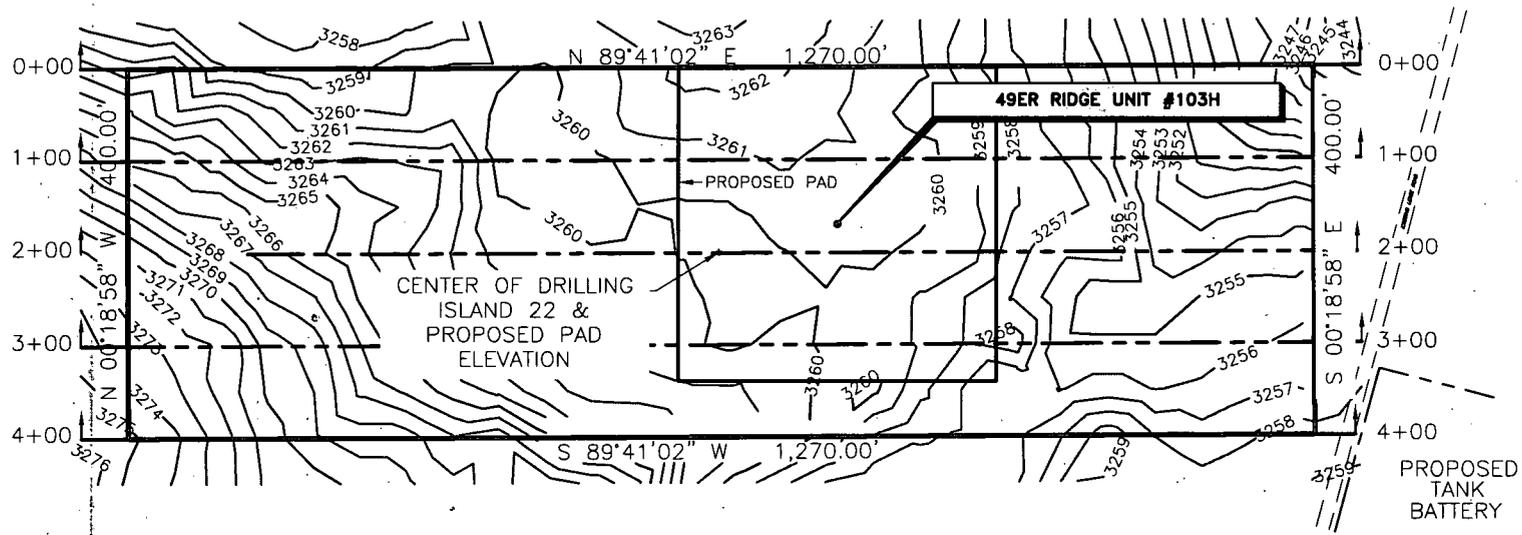


Exhibit "E1" battery site for "test" well



Topographic Survey of Drilling Island 22  
 situated within the SE 1/4 Section 22,  
 Township 23 South, Range 30 East,  
 N. M. P. M., Eddy County, N. M.



NOTE:

1. Proposed grade established at center of pad elevation at Client's request.
2. No engineering was, at the Client's request, performed to determine compaction or other factors.
3. Elevations are NAVD88 based upon a static GPS observation resolved through OPUS.

SCALE: 1" = 200'  
 0 100 200  
 BEARINGS ARE GRID NAD 27  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

Firm No.: TX 10193838 NM 4655451

Copyright 2014 - All Rights Reserved

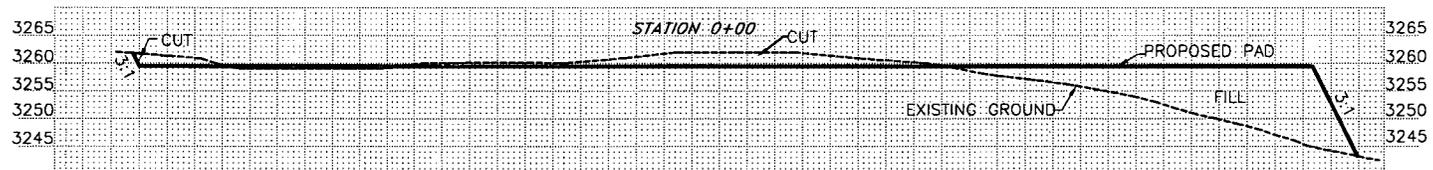
NO.	REVISION	DATE
JOB NO.:	LS140092	
DWG. NO.:	140092_1B	



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: 1" = 200'
DATE: 2-21-14
SURVEYED BY: BK
DRAWN BY: LWB
APPROVED BY: RMH
SHEET : 1 OF 6

Topographic Survey of Drilling Island 22  
 situated within the SE 1/4 Section 22,  
 Township 23 South, Range 30 East,  
 N. M. P. M., Eddy County, N. M.



NOTE:

1. Proposed grade established at center of pad elevation at Client's request.
2. No engineering was, at the Client's request, performed to determine compaction or other factors.
3. Elevations are NAVD88 based upon a static GPS observation resolved through OPUS.

SCALE: 1" = 200'  
 0 100 200

BEARINGS ARE GRID NAD 27  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

SCALE: 1" = 200' HORIZ.  
 1" = 30' VERT.

Firm No.: TX 10193838 NM 4655451

Copyright 2014 - All Rights Reserved

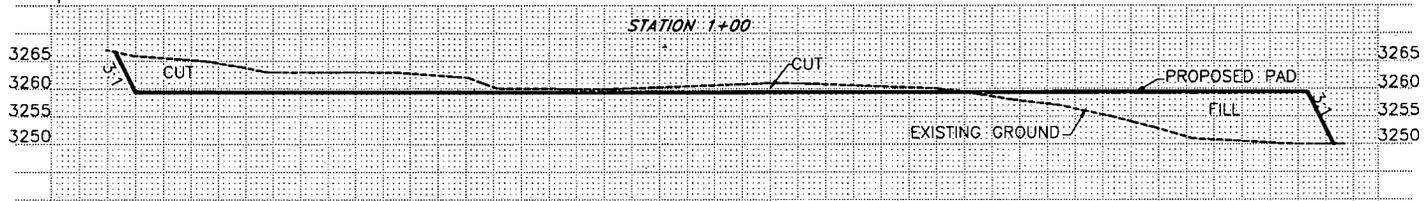
NO.	REVISION	DATE
JOB NO.: LS140092		
DWG. NO.: 140092_2B		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

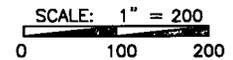
SCALE: SEE ABOVE
DATE: 2/21/14
SURVEYED BY: BK
DRAWN BY: LWB
APPROVED BY: RMH
SHEET : 2 OF 6

Topographic Survey of Drilling Island 22  
 situated within the SE 1/4 Section 22,  
 Township 23 South, Range 30 East,  
 N. M. P. M., Eddy County, N. M.



NOTE

1. Proposed grade established at center of pad elevation at Client's request.
2. No engineering was, at the Client's request, performed to determine compaction or other factors.
3. Elevations are NAVD88 based upon a static GPS observation resolved through OPUS.



BEARINGS ARE GRID NAD 27  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

SCALE: 1" = 200' HORIZ.  
 1" = 30' VERT.

Firm No.: TX 10193838 NM 4655451

Copyright 2014 - All Rights Reserved

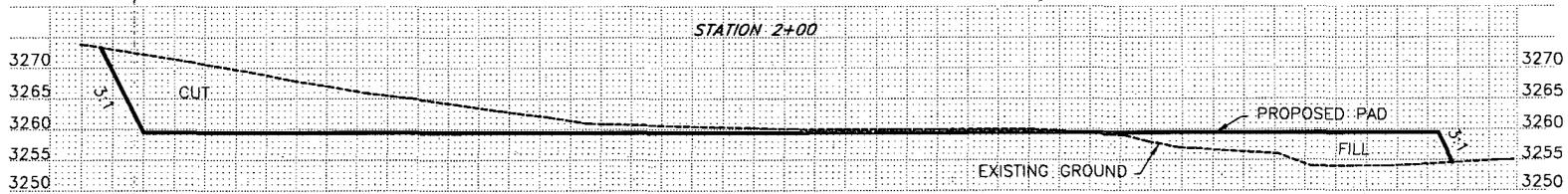
NO.	REVISION	DATE
JOB NO.: LS140092		
DWG. NO.: 140092_3B		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: SEE ABOVE
DATE: 2/21/14
SURVEYED BY: BK
DRAWN BY: JF
APPROVED BY: RMH
SHEET : 3 OF 6

Topographic Survey of Drilling Island 22  
 situated within the SE 1/4 Section 22,  
 Township 23 South, Range 30 East,  
 N. M. P. M., Eddy County, N. M.



SCALE: 1" = 200'  
 0 100 200  
 BEARINGS ARE GRID NAD 27  
 NM. EAST  
 DISTANCES ARE HORIZ. GROUND.

SCALE: 1" = 200' HORIZ.  
 1" = 30' VERT.

NOTE:

- Proposed grade established at center of pad elevation at Client's request.
- No engineering was, at the Client's request, performed to determine compaction or other factors.
- Elevations are NAVD88 based upon a static GPS observation resolved through OPUS.

Firm No.: TX 10193838 NM 4655451

Copyright 2014 - All Rights Reserved

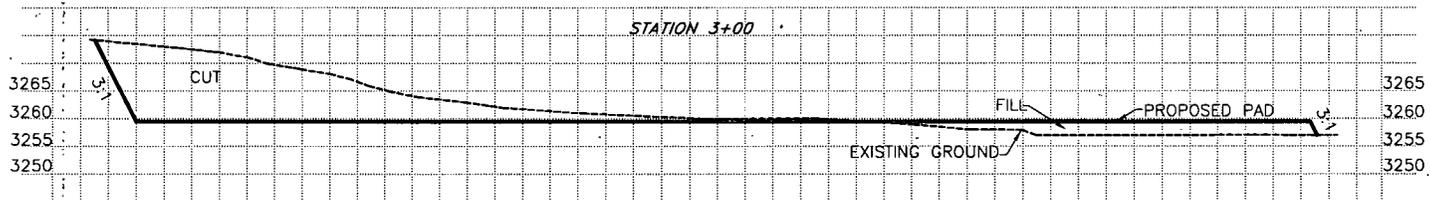
NO:	REVISION:	DATE:
JOB NO:	LS140092	
DWG. NO.:	140092_4B	



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

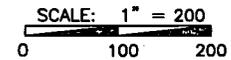
SCALE: SEE ABOVE
DATE: 2/21/14
SURVEYED BY: BK
DRAWN BY: LWB
APPROVED BY: RMH
SHEET : 4 OF 6

Topographic Survey of Drilling Island 22  
 situated within the SE 1/4 Section 22,  
 Township 23 South, Range 30 East,  
 N. M. P. M., Eddy County, N. M.



NOTE:

1. Proposed grade established at center of pad elevation at Client's request.
2. No engineering was, at the Client's request, performed to determine compaction or other factors.
3. Elevations are NAVD88 based upon a static GPS observation resolved through OPUS.



BEARINGS ARE GRID NAD 27  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

SCALE: 1" = 200' HORIZ.  
 1" = 30' VERT.

Firm No. TX 10193838 NM 4655451

Copyright 2014 - All Rights Reserved

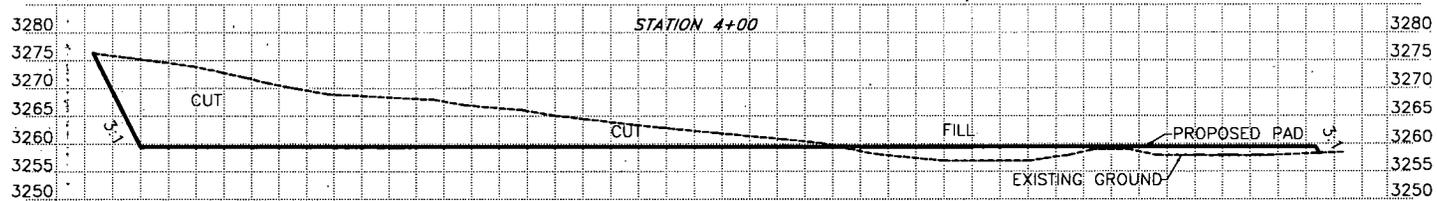
NO.	REVISION	DATE
JOB NO.: LS140092		
DWG. NO.: 140092_5B		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: SEE ABOVE
DATE: 2/21/14
SURVEYED BY: BK
DRAWN BY: JF
APPROVED BY: RMH
SHEET : 5 OF 6

Topographic Survey of Drilling Island 22  
 situated within the SE 1/4 Section 22,  
 Township 23 South, Range 30 East,  
 N. M. P. M., Eddy County, N. M.



**NOTE:**

1. Proposed grade established at center of pad elevation at Client's request.
2. No engineering was, at the Client's request, performed to determine compaction or other factors.
3. Elevations are NAVD88 based upon a static GPS observation resolved through OPUS.

SCALE: 1" = 200'  
 0 100 200

BEARINGS ARE GRID NAD 27  
 NM EAST  
 DISTANCES ARE HORIZ. GROUND.

SCALE: 1" = 200' HORIZ.  
 1" = 30' VERT.

Firm No. TX 10193838 NM 4655451

Copyright 2014 - All Rights Reserved

NO.	REVISION	DATE
JOB NO: LS140092		
DWG. NO.: 140092_6B		



308 W. BROADWAY ST., HOBBS, NM 88240 (575) 964-8200

SCALE: SEE ABOVE
DATE: 2/21/14
SURVEYED BY: BK
DRAWN BY: JF
APPROVED BY: RMH
SHEET : 6 OF 6

**Drilling Program**  
**Mewbourne Oil Company**  
 Forty Niner Ridge Unit #103H  
 630' FSL & 1580' FEL  
 Sec. 22 T23S R30E  
 Eddy County, New Mexico

**1. The estimated (TVD) tops of geological markers are as follows:**

Rustler	460'
Top of Salt	750'
Base of Salt/Lamar	3515'
Delaware	3750'
*Bone Springs	7620'
1 <sup>st</sup> Bone Spring Sand	8600'
2 <sup>nd</sup> Bone Spring Sand	9350'
Wolfcamp	WILL NOT PENETRATE

**2. Estimated depths of anticipated fresh water, oil, or gas:**

Water	Fresh water is anticipated @ 275' and will be protected by setting surface casing at 485' and cementing to surface.
Hydrocarbons	Oil and gas are anticipated in the above (*) formations. These zones will be protected by casing as necessary.

**3. Pressure control equipment:**

A 2000# WP annular will be installed after running 13 3/8" casing. A 3000# WP double ram BOP and 3000# WP Annular will be installed after running 9 5/8" casing. Pressure tests will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOPs will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use. Will test the 13 3/8" annular to 1500# and the 9 5/8" BOPE to 3000# and annular to 1500# with a third party testing company before drilling below each shoe, but will test again, if needed, in 30 days from the 1<sup>st</sup> test as per BLM Onshore Oil and Gas Order #2.

**4. Drilling Program:**

MOC proposes to drill a vertical wellbore to 9299' & kick off to horizontal @ 9776' TVD. The well will be drilled to 19209' MD (9756' TVD). See attached directional plan.

**5. Proposed casing and cementing program:**

*See  
COA*

**A. Casing Program:**

Hole Size	Casing	Wt/Ft.	Grade	Depth	Jt Type
17 1/2"	13 3/8" (new)	48#	H40	0'-485' <i>425'</i>	ST&C
12 1/4"	9 5/8" (new)	36#	J55	0'-3200'	LT&C
12 1/4"	9 5/8" (new)	40#	J55	3200'-3700'	LT&C
8 3/4"	5 1/2" (new)	17#	P110	0-9299' MD	LT&C
8 3/4"	5 1/2" (new)	17#	P110	9299'-10050' MD	BT&C
8 3/4"	5 1/2" (new)	17#	P110	10050'-19209' MD	LT&C

Minimum casing design factors: Collapse 1.125, Burst 1.0, Tensile strength 1.8.

\*Subject to availability of casing.

\*Perforations will be placed from 9800' MD to 19,209' MD, selective shots to ensure production in a 40 acre tracts.

**B. Cementing Program:**

- i. Surface Casing: 225 sacks \*Lite "C" (35:65:4) cement w/salt and lost circulation additives. Yield at 1.75 cuft/sk. Mix water @ 11.17 gal/sk. 200 sks class "C" w/2% CaCl<sub>2</sub>. Yield at 1.34 cuft/sk. Mix water @ 6.33 gal/sk. Cmt circulated to surface w/100% excess.
- ii. Intermediate Casing: 600 sacks \*Lite "C" (35:65:4) cement w/salt and lost circulation material additives. Yield at 2.0 cuft/sk. Mix water @ 11.17 gal/sk. 200 sks class "C" neat. Yield at 1.33 cuft/sk. Mix water @ 6.33 gal/sk. Cmt circulated to surface w/25% excess.
- iii. Production Casing: 1400 sacks Class H light cement with fluid loss, LCM, & salt additives. Yield at 2.12 cuft/sk. Mix water @ 11.31 gal/sk. Tail w/2400 sacks Class H cmt. Yield at 1.22 cuft/sk. Mix water @ 5.34 gal/sk. Circulated to surface w/25% excess.

See COA

See COA

\*Referring to above blends of lite cement: (wt% fly ash : wt% cement : wt% bentonite of the total of first two numbers). Generic names of additives are used since the availability of specific company and products are unknown at this time.

\*Mewbourne Oil Company reserves the right to change cement designs as hole conditions may warrant.

**6. Mud Program:**

See COA

Interval	Type System	Weight	Viscosity	Fluid Loss
0'-485'	FW spud mud	8.6-9.0	32-34	NA
485'-3700'	Brine water	10.0	29-30	NA
3700'-9299'	FW mud	8.6-8.8	28-30	NA
9299'- TD	FW w/Polymer	8.5-8.7	32-35	15

\*Visual mud monitoring system shall be in place to detect volume changes indicating loss or gain of circulation fluid volume. Sufficient mud materials will be kept on location at all times to combat abnormal conditions.

**7. Evaluation Program:**

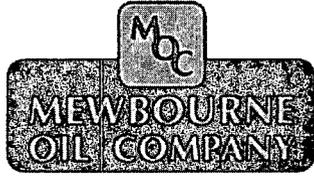
Samples: 10' samples from surface casing to TD.  
Logging: GR, CNL & Gyro from KOP-100' (9199') to surface and GR from KOP to TD.

**8. Downhole Conditions**

Zones of abnormal pressure: None anticipated  
Zones of lost circulation: Anticipated in surface and intermediate holes  
Maximum bottom hole temperature: 120 degree F  
Maximum bottom hole pressure: 8.3 lbs/gal gradient or less (9776' x .43668 = 4240 psi)

**9. Anticipated Starting Date:**

Mewbourne Oil Company intends to drill this well as soon as possible after receiving approval with approximately 45 days involved in drilling operations and an additional 10 days involved in completion operations on the project.



# **Mewbourne Oil Company .**

**Eddy County, New Mexico**

**Section 22/15-23S-30E Forty Niner Ridge Unit #103**

**Forty Niner ridge Unit #103H**

**Original Hole**

**Plan: Plan#1**

## **Standard Planning Report**

**25 February, 2014**





# Stryker Directional Planning Report



<b>Database:</b> EDM,5000.1;Single>User:Db	<b>Local Co-ordinate Reference:</b> Well:Forty Niner ridge Unit #103H	
<b>Company:</b> Mewbourne Oil Company	<b>TVD Reference:</b> GL:3261'+20'@ 3281.0usft (Patterson #106)	
<b>Project:</b> Eddy County, New Mexico	<b>MD Reference:</b> GL:3261'+20'@ 3281.0usft (Patterson #106)	
<b>Site:</b> Section 22/15-23S-30E, Forty Niner Ridge Unit #103	<b>North Reference:</b> Grid	
<b>Well:</b> Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b> Minimum Curvature	
<b>Wellbore:</b> Original Hole		
<b>Design:</b> Plan#1		

<b>Project:</b> Eddy County, New Mexico		
<b>Map System:</b> US State Plane 1927 (Exact solution)	<b>System Datum:</b> Mean Sea Level	
<b>Geo Datum:</b> NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b> New Mexico East 3001		

<b>Site:</b> Section 22/15-23S-30E, Forty Niner Ridge Unit #103					
<b>Site Position:</b>		<b>Northing:</b>	467,644.30 usft	<b>Latitude:</b>	32° 17' 5.287 N
<b>From:</b> Map		<b>Easting:</b>	644,758.70 usft	<b>Longitude:</b>	103° 51' 53.677 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.25 °

<b>Well:</b> Forty Niner ridge Unit #103H					
<b>Well Position</b>		<b>Northing:</b>	467,644.30 usft	<b>Latitude:</b>	32° 17' 5.287 N
	+N/-S 0.0 usft	<b>Easting:</b>	644,758.70 usft	<b>Longitude:</b>	103° 51' 53.677 W
	+E/-W 0.0 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	3,261.0 usft
<b>Position Uncertainty</b>	0.0 usft				

<b>Wellbore:</b> Original Hole	
--------------------------------	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/24/2014	7.39	60.13	48,353

<b>Design:</b> Plan#1	
-----------------------	--

<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	357.36

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TEO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
9,298.5	0.00	0.00	9,298.5	0.0	0.0	0.00	0.00	0.00	0.00	
10,049.5	90.12	357.36	9,776.0	478.0	-22.0	12.00	12.00	-0.35	357.36	
19,208.9	90.12	357.36	9,756.0	9,627.6	-444.0	0.00	0.00	0.00	0.00	PBHL 49er Ridge L



# Stryker Directional Planning Report



<b>Database:</b>	EDM(5000.1;Single User;Db	<b>Local Co-ordinate Reference:</b>	Well:Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261.+ 20 @ 3281'0usft (Patterson #106)
<b>Project:</b>	Eddy County New Mexico	<b>MD Reference:</b>	GL 3261.+ 20 @ 3281'0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00



# Stryker Directional Planning Report



<b>Database:</b>	EDM:5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 +20 @ 3281.0usft (Patterson #106)
<b>Project:</b>	Eddy County, New Mexico	<b>MD Reference:</b>	GL 3261 +20 @ 3281.0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/S (usft)	+E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00
9,298.5	0.00	0.00	9,298.5	0.0	0.0	0.0	0.00	0.00	0.00
<b>9298.5 MD KOP</b>									
9,300.0	0.18	357.36	9,300.0	0.0	0.0	0.0	12.00	12.00	0.00
9,325.0	3.18	357.36	9,325.0	0.7	0.0	0.7	12.00	12.00	0.00
9,350.0	6.18	357.36	9,349.9	2.8	-0.1	2.8	12.00	12.00	0.00
9,375.0	9.18	357.36	9,374.7	6.1	-0.3	6.1	12.00	12.00	0.00
9,400.0	12.18	357.36	9,399.2	10.7	-0.5	10.7	12.00	12.00	0.00
9,425.0	15.18	357.36	9,423.5	16.6	-0.8	16.7	12.00	12.00	0.00
9,450.0	18.18	357.36	9,447.5	23.8	-1.1	23.8	12.00	12.00	0.00
9,475.0	21.18	357.36	9,471.0	32.2	-1.5	32.3	12.00	12.00	0.00
9,500.0	24.18	357.36	9,494.1	41.8	-1.9	41.9	12.00	12.00	0.00
9,525.0	27.18	357.36	9,516.6	52.7	-2.4	52.7	12.00	12.00	0.00
9,550.0	30.18	357.36	9,538.5	64.7	-3.0	64.7	12.00	12.00	0.00



# Stryker Directional Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 + 20 @ 3281.0usft (Patterson #106)
<b>Project:</b>	Eddy County, New Mexico	<b>MD Reference:</b>	GL 3261 + 20 @ 3281.0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Gnd
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,575.0	33.18	357.36	9,559.8	77.8	-3.6	77.8	12.00	12.00	0.00
9,600.0	36.18	357.36	9,580.4	92.0	-4.2	92.1	12.00	12.00	0.00
9,625.0	39.18	357.36	9,600.1	107.2	-4.9	107.4	12.00	12.00	0.00
9,650.0	42.18	357.36	9,619.1	123.5	-5.7	123.6	12.00	12.00	0.00
9,675.0	45.18	357.36	9,637.2	140.8	-6.5	140.9	12.00	12.00	0.00
9,700.0	48.18	357.36	9,654.3	158.9	-7.3	159.1	12.00	12.00	0.00
9,725.0	51.18	357.36	9,670.5	178.0	-8.2	178.2	12.00	12.00	0.00
9,750.0	54.18	357.36	9,685.7	197.8	-9.1	198.0	12.00	12.00	0.00
9,775.0	57.18	357.36	9,699.8	218.4	-10.1	218.7	12.00	12.00	0.00
9,800.0	60.18	357.36	9,712.7	239.8	-11.1	240.0	12.00	12.00	0.00
9,825.0	63.18	357.36	9,724.6	261.8	-12.1	262.0	12.00	12.00	0.00
9,850.0	66.18	357.36	9,735.3	284.3	-13.1	284.6	12.00	12.00	0.00
9,875.0	69.18	357.36	9,744.8	307.4	-14.2	307.8	12.00	12.00	0.00
9,900.0	72.18	357.36	9,753.1	331.0	-15.3	331.3	12.00	12.00	0.00
9,925.0	75.18	357.36	9,760.1	355.0	-16.4	355.3	12.00	12.00	0.00
9,950.0	78.18	357.36	9,765.8	379.3	-17.5	379.7	12.00	12.00	0.00
9,975.0	81.18	357.36	9,770.3	403.8	-18.6	404.3	12.00	12.00	0.00
10,000.0	84.18	357.36	9,773.5	428.6	-19.8	429.0	12.00	12.00	0.00
10,025.0	87.18	357.36	9,775.4	453.5	-20.9	454.0	12.00	12.00	0.00
10,049.5	90.12	357.36	9,776.0	478.0	-22.0	478.5	12.00	12.00	0.00
<b>10049.5' MD LP</b>									
10,100.0	90.12	357.36	9,775.9	528.4	-24.4	529.0	0.01	0.01	0.00
10,200.0	90.12	357.36	9,775.6	628.3	-29.0	629.0	0.00	0.00	0.00
10,300.0	90.12	357.36	9,775.4	728.2	-33.6	729.0	0.00	0.00	0.00
10,400.0	90.12	357.36	9,775.2	828.1	-38.2	829.0	0.00	0.00	0.00
10,500.0	90.12	357.36	9,775.0	928.0	-42.8	929.0	0.00	0.00	0.00
10,600.0	90.12	357.36	9,774.8	1,027.9	-47.4	1,029.0	0.00	0.00	0.00
10,700.0	90.12	357.36	9,774.5	1,127.8	-52.0	1,129.0	0.00	0.00	0.00
10,800.0	90.12	357.36	9,774.3	1,227.7	-56.6	1,229.0	0.00	0.00	0.00
10,900.0	90.12	357.36	9,774.1	1,327.6	-61.2	1,329.0	0.00	0.00	0.00
11,000.0	90.12	357.36	9,773.9	1,427.4	-65.8	1,429.0	0.00	0.00	0.00
11,100.0	90.12	357.36	9,773.7	1,527.3	-70.4	1,529.0	0.00	0.00	0.00
11,200.0	90.12	357.36	9,773.5	1,627.2	-75.0	1,629.0	0.00	0.00	0.00
11,300.0	90.12	357.36	9,773.2	1,727.1	-79.7	1,729.0	0.00	0.00	0.00
11,400.0	90.12	357.36	9,773.0	1,827.0	-84.3	1,829.0	0.00	0.00	0.00
11,500.0	90.12	357.36	9,772.8	1,926.9	-88.9	1,929.0	0.00	0.00	0.00
11,600.0	90.12	357.36	9,772.6	2,026.8	-93.5	2,029.0	0.00	0.00	0.00
11,700.0	90.12	357.36	9,772.4	2,126.7	-98.1	2,129.0	0.00	0.00	0.00
11,800.0	90.12	357.36	9,772.1	2,226.6	-102.7	2,229.0	0.00	0.00	0.00
11,900.0	90.12	357.36	9,771.9	2,326.5	-107.3	2,329.0	0.00	0.00	0.00
12,000.0	90.12	357.36	9,771.7	2,426.4	-111.9	2,429.0	0.00	0.00	0.00
12,100.0	90.12	357.36	9,771.5	2,526.3	-116.5	2,529.0	0.00	0.00	0.00
12,200.0	90.12	357.36	9,771.3	2,626.2	-121.1	2,629.0	0.00	0.00	0.00
12,300.0	90.12	357.36	9,771.1	2,726.1	-125.7	2,729.0	0.00	0.00	0.00
12,400.0	90.12	357.36	9,770.8	2,826.0	-130.3	2,829.0	0.00	0.00	0.00
12,500.0	90.12	357.36	9,770.6	2,925.8	-134.9	2,929.0	0.00	0.00	0.00
12,600.0	90.12	357.36	9,770.4	3,025.7	-139.5	3,029.0	0.00	0.00	0.00
12,700.0	90.12	357.36	9,770.2	3,125.6	-144.1	3,129.0	0.00	0.00	0.00
12,800.0	90.12	357.36	9,770.0	3,225.5	-148.8	3,229.0	0.00	0.00	0.00
12,900.0	90.12	357.36	9,769.8	3,325.4	-153.4	3,329.0	0.00	0.00	0.00
13,000.0	90.12	357.36	9,769.5	3,425.3	-158.0	3,429.0	0.00	0.00	0.00
13,100.0	90.12	357.36	9,769.3	3,525.2	-162.6	3,529.0	0.00	0.00	0.00



# Stryker Directional Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 + 20 @ 3281.0usft (Patterson #106)
<b>Project:</b>	Eddy County, New Mexico	<b>MD Reference:</b>	GL 3261 + 20 @ 3281.0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

### Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,200.0	90.12	357.36	9,769.1	3,625.1	-167.2	3,629.0	0.00	0.00	0.00
13,300.0	90.12	357.36	9,768.9	3,725.0	-171.8	3,729.0	0.00	0.00	0.00
13,400.0	90.12	357.36	9,768.7	3,824.9	-176.4	3,829.0	0.00	0.00	0.00
13,500.0	90.12	357.36	9,768.4	3,924.8	-181.0	3,929.0	0.00	0.00	0.00
13,600.0	90.12	357.36	9,768.2	4,024.7	-185.6	4,029.0	0.00	0.00	0.00
13,700.0	90.12	357.36	9,768.0	4,124.6	-190.2	4,129.0	0.00	0.00	0.00
13,800.0	90.12	357.36	9,767.8	4,224.5	-194.8	4,229.0	0.00	0.00	0.00
13,900.0	90.12	357.36	9,767.6	4,324.4	-199.4	4,329.0	0.00	0.00	0.00
14,000.0	90.12	357.36	9,767.4	4,424.3	-204.0	4,429.0	0.00	0.00	0.00
14,100.0	90.12	357.36	9,767.1	4,524.1	-208.6	4,529.0	0.00	0.00	0.00
14,200.0	90.12	357.36	9,766.9	4,624.0	-213.3	4,629.0	0.00	0.00	0.00
14,300.0	90.12	357.36	9,766.7	4,723.9	-217.9	4,729.0	0.00	0.00	0.00
14,400.0	90.12	357.36	9,766.5	4,823.8	-222.5	4,829.0	0.00	0.00	0.00
14,500.0	90.12	357.36	9,766.3	4,923.7	-227.1	4,929.0	0.00	0.00	0.00
14,600.0	90.12	357.36	9,766.0	5,023.6	-231.7	5,029.0	0.00	0.00	0.00
14,700.0	90.12	357.36	9,765.8	5,123.5	-236.3	5,129.0	0.00	0.00	0.00
14,800.0	90.12	357.36	9,765.6	5,223.4	-240.9	5,229.0	0.00	0.00	0.00
14,900.0	90.12	357.36	9,765.4	5,323.3	-245.5	5,329.0	0.00	0.00	0.00
15,000.0	90.12	357.36	9,765.2	5,423.2	-250.1	5,429.0	0.00	0.00	0.00
15,100.0	90.12	357.36	9,765.0	5,523.1	-254.7	5,529.0	0.00	0.00	0.00
15,200.0	90.12	357.36	9,764.7	5,623.0	-259.3	5,629.0	0.00	0.00	0.00
15,300.0	90.12	357.36	9,764.5	5,722.9	-263.9	5,729.0	0.00	0.00	0.00
15,400.0	90.12	357.36	9,764.3	5,822.8	-268.5	5,829.0	0.00	0.00	0.00
15,500.0	90.12	357.36	9,764.1	5,922.7	-273.1	5,929.0	0.00	0.00	0.00
15,600.0	90.12	357.36	9,763.9	6,022.6	-277.7	6,029.0	0.00	0.00	0.00
15,700.0	90.12	357.36	9,763.6	6,122.4	-282.4	6,129.0	0.00	0.00	0.00
15,800.0	90.12	357.36	9,763.4	6,222.3	-287.0	6,229.0	0.00	0.00	0.00
15,900.0	90.12	357.36	9,763.2	6,322.2	-291.6	6,329.0	0.00	0.00	0.00
16,000.0	90.12	357.36	9,763.0	6,422.1	-296.2	6,429.0	0.00	0.00	0.00
16,100.0	90.12	357.36	9,762.8	6,522.0	-300.8	6,529.0	0.00	0.00	0.00
16,200.0	90.12	357.36	9,762.6	6,621.9	-305.4	6,629.0	0.00	0.00	0.00
16,300.0	90.12	357.36	9,762.3	6,721.8	-310.0	6,728.9	0.00	0.00	0.00
16,400.0	90.12	357.36	9,762.1	6,821.7	-314.6	6,828.9	0.00	0.00	0.00
16,500.0	90.12	357.36	9,761.9	6,921.6	-319.2	6,928.9	0.00	0.00	0.00
16,600.0	90.12	357.36	9,761.7	7,021.5	-323.8	7,028.9	0.00	0.00	0.00
16,700.0	90.12	357.36	9,761.5	7,121.4	-328.4	7,128.9	0.00	0.00	0.00
16,800.0	90.12	357.36	9,761.3	7,221.3	-333.0	7,228.9	0.00	0.00	0.00
16,900.0	90.12	357.36	9,761.0	7,321.2	-337.6	7,328.9	0.00	0.00	0.00
17,000.0	90.12	357.36	9,760.8	7,421.1	-342.2	7,428.9	0.00	0.00	0.00
17,100.0	90.12	357.36	9,760.6	7,521.0	-346.9	7,528.9	0.00	0.00	0.00
17,200.0	90.12	357.36	9,760.4	7,620.8	-351.5	7,628.9	0.00	0.00	0.00
17,300.0	90.12	357.36	9,760.2	7,720.7	-356.1	7,728.9	0.00	0.00	0.00
17,400.0	90.12	357.36	9,759.9	7,820.6	-360.7	7,828.9	0.00	0.00	0.00
17,500.0	90.12	357.36	9,759.7	7,920.5	-365.3	7,928.9	0.00	0.00	0.00
17,600.0	90.12	357.36	9,759.5	8,020.4	-369.9	8,028.9	0.00	0.00	0.00
17,700.0	90.12	357.36	9,759.3	8,120.3	-374.5	8,128.9	0.00	0.00	0.00
17,800.0	90.12	357.36	9,759.1	8,220.2	-379.1	8,228.9	0.00	0.00	0.00
17,900.0	90.12	357.36	9,758.9	8,320.1	-383.7	8,328.9	0.00	0.00	0.00
18,000.0	90.12	357.36	9,758.6	8,420.0	-388.3	8,428.9	0.00	0.00	0.00
18,100.0	90.12	357.36	9,758.4	8,519.9	-392.9	8,528.9	0.00	0.00	0.00
18,200.0	90.12	357.36	9,758.2	8,619.8	-397.5	8,628.9	0.00	0.00	0.00
18,300.0	90.12	357.36	9,758.0	8,719.7	-402.1	8,728.9	0.00	0.00	0.00
18,400.0	90.12	357.36	9,757.8	8,819.6	-406.7	8,828.9	0.00	0.00	0.00



# Stryker Directional Planning Report

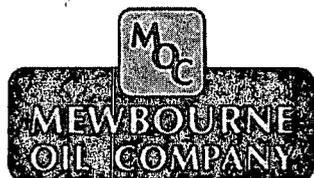


<b>Database:</b>	EDM/5000.1 Single User.Db	<b>Local Co-ordinate Reference:</b>	Well Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 +20 @ 3281.0usft (Patterson #106)
<b>Project:</b>	Eddy County, New Mexico	<b>MD Reference:</b>	GL 3261 +20 @ 3281.0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
18,500.0	90.12	357.36	9,757.5	8,919.5	-411.3	8,928.9	0.00	0.00	0.00
18,600.0	90.12	357.36	9,757.3	9,019.4	-416.0	9,028.9	0.00	0.00	0.00
18,700.0	90.12	357.36	9,757.1	9,119.3	-420.6	9,128.9	0.00	0.00	0.00
18,800.0	90.12	357.36	9,756.9	9,219.1	-425.2	9,228.9	0.00	0.00	0.00
18,900.0	90.12	357.36	9,756.7	9,319.0	-429.8	9,328.9	0.00	0.00	0.00
19,000.0	90.12	357.36	9,756.5	9,418.9	-434.4	9,428.9	0.00	0.00	0.00
19,100.0	90.12	357.36	9,756.2	9,518.8	-439.0	9,528.9	0.00	0.00	0.00
19,208.9	90.12	357.36	9,756.0	9,627.6	-444.0	9,637.8	0.00	0.00	0.00
19208.9' MD PBHL									

Design Targets										
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL 49er Ridge Unit	- plan hits target center	0.00	0.00	9,756.0	9,627.6	-444.0	477,271.95	644,314.70	32° 18' 40.581 N	103° 51' 58.361 W
- Point										
Lp 49er Ridge Unit #1	- plan misses target center by 1.2usft at 10049.5usft MD (9776.0 TVD, 477.9 N, -22.0 E)	0.00	0.00	9,776.0	478.0	-20.8	468,122.28	644,737.88	32° 17' 10.018 N	103° 51' 53.896 W
- Point										

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
9,298.5	9,298.5	0.0	0.0	9298.5' MD KOP
10,049.5	9,776.0	478.0	-22.0	10049.5' MD LP
19,208.9	9,756.0	9,627.6	-444.0	19208.9' MD PBHL



# **Mewbourne Oil Company .**

**Eddy County, New Mexico**

**Section 22/15-23S-30E Forty Niner Ridge Unit #103**

**Forty Niner ridge Unit #103H**

**Original Hole**

**Plan: Plan#1**

## **Standard Planning Report - Geographic**

**25 February, 2014**





# Stryker Directional Planning Report - Geographic



<b>Database:</b>	EDM:5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well:Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 + 20 @ 3281 0usft (Patterson #106)
<b>Project:</b>	Eddy County, New Mexico	<b>MD Reference:</b>	GL 3261 + 20 @ 3281 0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E, Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

<b>Project</b>	Eddy County, New Mexico		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site</b>	Section 22/15-23S-30E, Forty Niner Ridge Unit #103				
<b>Site Position:</b>	<b>Northing:</b>	467,644.30 usft	<b>Latitude:</b>	32° 17' 5.287 N	
<b>From:</b> Map	<b>Easting:</b>	644,758.70 usft	<b>Longitude:</b>	103° 51' 53.677 W	
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.25 °

<b>Well</b>	Forty Niner ridge Unit #103H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	467,644.30 usft	<b>Latitude:</b>	32° 17' 5.287 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	644,758.70 usft	<b>Longitude:</b>	103° 51' 53.677 W
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	3,261.0 usft

<b>Wellbore</b>	Original Hole			
-----------------	---------------	--	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/24/2014	7.39	60.13	48,353

<b>Design</b>	Plan#1			
---------------	--------	--	--	--

<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	357.36

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
9,298.5	0.00	0.00	9,298.5	0.0	0.0	0.00	0.00	0.00	0.00	
10,049.5	90.12	357.36	9,776.0	478.0	-22.0	12.00	12.00	-0.35	357.36	
19,208.9	90.12	357.36	9,756.0	9,627.6	-444.0	0.00	0.00	0.00	0.00	PBHL 49er Ridge L



# Stryker Directional Planning Report - Geographic



<b>Database:</b>	EDM:5000.1:Single User Db	<b>Local Co-ordinate Reference:</b>	Well:Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261'+20'@ 3281'0usft (Patterson #106)
<b>Project:</b>	Eddy County, New Mexico	<b>MD Reference:</b>	GL 3261'+20'@ 3281'0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E- Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
100.0	0.00	0.00	100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
200.0	0.00	0.00	200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
300.0	0.00	0.00	300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
400.0	0.00	0.00	400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
500.0	0.00	0.00	500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
600.0	0.00	0.00	600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
700.0	0.00	0.00	700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
800.0	0.00	0.00	800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
900.0	0.00	0.00	900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,000.0	0.00	0.00	1,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,100.0	0.00	0.00	1,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,200.0	0.00	0.00	1,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,300.0	0.00	0.00	1,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,400.0	0.00	0.00	1,400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,500.0	0.00	0.00	1,500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,600.0	0.00	0.00	1,600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,700.0	0.00	0.00	1,700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,800.0	0.00	0.00	1,800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
1,900.0	0.00	0.00	1,900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,000.0	0.00	0.00	2,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,100.0	0.00	0.00	2,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,200.0	0.00	0.00	2,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,300.0	0.00	0.00	2,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,400.0	0.00	0.00	2,400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,500.0	0.00	0.00	2,500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,600.0	0.00	0.00	2,600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,700.0	0.00	0.00	2,700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,800.0	0.00	0.00	2,800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
2,900.0	0.00	0.00	2,900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,000.0	0.00	0.00	3,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,100.0	0.00	0.00	3,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,200.0	0.00	0.00	3,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,300.0	0.00	0.00	3,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,400.0	0.00	0.00	3,400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,500.0	0.00	0.00	3,500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,600.0	0.00	0.00	3,600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,700.0	0.00	0.00	3,700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,800.0	0.00	0.00	3,800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
3,900.0	0.00	0.00	3,900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,000.0	0.00	0.00	4,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,100.0	0.00	0.00	4,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,200.0	0.00	0.00	4,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,300.0	0.00	0.00	4,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,400.0	0.00	0.00	4,400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,500.0	0.00	0.00	4,500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,600.0	0.00	0.00	4,600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,700.0	0.00	0.00	4,700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,800.0	0.00	0.00	4,800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
4,900.0	0.00	0.00	4,900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,000.0	0.00	0.00	5,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,100.0	0.00	0.00	5,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,200.0	0.00	0.00	5,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,300.0	0.00	0.00	5,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W



# Stryker Directional Planning Report - Geographic



<b>Database:</b>	EDM5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well: Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 +20 @ 3281' 0usft (Patterson) #106
<b>Project:</b>	Eddy County New Mexico	<b>MD Reference:</b>	GL 3261 +20 @ 3281' 0usft (Patterson) #106
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan #1		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,400.0	0.00	0.00	5,400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,500.0	0.00	0.00	5,500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,600.0	0.00	0.00	5,600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,700.0	0.00	0.00	5,700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,800.0	0.00	0.00	5,800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
5,900.0	0.00	0.00	5,900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,000.0	0.00	0.00	6,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,100.0	0.00	0.00	6,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,200.0	0.00	0.00	6,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,300.0	0.00	0.00	6,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,400.0	0.00	0.00	6,400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,500.0	0.00	0.00	6,500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,600.0	0.00	0.00	6,600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,700.0	0.00	0.00	6,700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,800.0	0.00	0.00	6,800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
6,900.0	0.00	0.00	6,900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,000.0	0.00	0.00	7,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,100.0	0.00	0.00	7,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,200.0	0.00	0.00	7,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,300.0	0.00	0.00	7,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,400.0	0.00	0.00	7,400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,500.0	0.00	0.00	7,500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,600.0	0.00	0.00	7,600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,700.0	0.00	0.00	7,700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,800.0	0.00	0.00	7,800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
7,900.0	0.00	0.00	7,900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,000.0	0.00	0.00	8,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,100.0	0.00	0.00	8,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,200.0	0.00	0.00	8,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,300.0	0.00	0.00	8,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,400.0	0.00	0.00	8,400.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,500.0	0.00	0.00	8,500.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,600.0	0.00	0.00	8,600.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,700.0	0.00	0.00	8,700.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,800.0	0.00	0.00	8,800.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
8,900.0	0.00	0.00	8,900.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
9,000.0	0.00	0.00	9,000.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
9,100.0	0.00	0.00	9,100.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
9,200.0	0.00	0.00	9,200.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
9,298.5	0.00	0.00	9,298.5	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
<b>9298.5' MD KOP</b>									
9,300.0	0.18	357.36	9,300.0	0.0	0.0	467,644.30	644,758.70	32° 17' 5.287 N	103° 51' 53.677 W
9,325.0	3.18	357.36	9,325.0	0.7	0.0	467,645.03	644,758.67	32° 17' 5.294 N	103° 51' 53.678 W
9,350.0	6.18	357.36	9,349.9	2.8	-0.1	467,647.07	644,758.58	32° 17' 5.315 N	103° 51' 53.679 W
9,375.0	9.18	357.36	9,374.7	6.1	-0.3	467,650.41	644,758.42	32° 17' 5.348 N	103° 51' 53.680 W
9,400.0	12.18	357.36	9,399.2	10.7	-0.5	467,655.04	644,758.21	32° 17' 5.393 N	103° 51' 53.683 W
9,425.0	15.18	357.36	9,423.5	16.6	-0.8	467,660.94	644,757.94	32° 17' 5.452 N	103° 51' 53.685 W
9,450.0	18.18	357.36	9,447.5	23.8	-1.1	467,668.11	644,757.61	32° 17' 5.523 N	103° 51' 53.689 W
9,475.0	21.18	357.36	9,471.0	32.2	-1.5	467,676.52	644,757.22	32° 17' 5.606 N	103° 51' 53.693 W
9,500.0	24.18	357.36	9,494.1	41.8	-1.9	467,686.15	644,756.77	32° 17' 5.701 N	103° 51' 53.698 W
9,525.0	27.18	357.36	9,516.6	52.7	-2.4	467,696.97	644,756.28	32° 17' 5.808 N	103° 51' 53.703 W
9,550.0	30.18	357.36	9,538.5	64.7	-3.0	467,708.95	644,755.72	32° 17' 5.927 N	103° 51' 53.709 W
9,575.0	33.18	357.36	9,559.8	77.8	-3.6	467,722.07	644,755.12	32° 17' 6.057 N	103° 51' 53.715 W
9,600.0	36.18	357.36	9,580.4	92.0	-4.2	467,736.27	644,754.46	32° 17' 6.198 N	103° 51' 53.722 W



# Stryker Directional Planning Report - Geographic



<b>Database:</b>	EDM 5000.1; Single User Db	<b>Local Co-ordinate Reference:</b>	Well: Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 + 20 @ 3281.0usft (Patterson #106)
<b>Project:</b>	Eddy County New Mexico	<b>MD Reference:</b>	GL 3261 + 20 @ 3281.0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
9,625.0	39.18	357.36	9,600.1	107.2	-4.9	467,751.54	644,753.76	32° 17' 6.349 N	103° 51' 53.730 W	
9,650.0	42.18	357.36	9,619.1	123.5	-5.7	467,767.81	644,753.01	32° 17' 6.510 N	103° 51' 53.737 W	
9,675.0	45.18	357.36	9,637.2	140.8	-6.5	467,785.06	644,752.21	32° 17' 6.680 N	103° 51' 53.746 W	
9,700.0	48.18	357.36	9,654.3	158.9	-7.3	467,803.23	644,751.38	32° 17' 6.860 N	103° 51' 53.755 W	
9,725.0	51.18	357.36	9,670.5	178.0	-8.2	467,822.26	644,750.50	32° 17' 7.049 N	103° 51' 53.764 W	
9,750.0	54.18	357.36	9,685.7	197.8	-9.1	467,842.12	644,749.58	32° 17' 7.245 N	103° 51' 53.774 W	
9,775.0	57.18	357.36	9,699.8	218.4	-10.1	467,862.75	644,748.63	32° 17' 7.449 N	103° 51' 53.784 W	
9,800.0	60.18	357.36	9,712.7	239.8	-11.1	467,884.08	644,747.65	32° 17' 7.661 N	103° 51' 53.794 W	
9,825.0	63.18	357.36	9,724.6	261.8	-12.1	467,906.06	644,746.63	32° 17' 7.878 N	103° 51' 53.805 W	
9,850.0	66.18	357.36	9,735.3	284.3	-13.1	467,928.63	644,745.59	32° 17' 8.101 N	103° 51' 53.816 W	
9,875.0	69.18	357.36	9,744.8	307.4	-14.2	467,951.73	644,744.53	32° 17' 8.330 N	103° 51' 53.827 W	
9,900.0	72.18	357.36	9,753.1	331.0	-15.3	467,975.30	644,743.44	32° 17' 8.563 N	103° 51' 53.838 W	
9,925.0	75.18	357.36	9,760.1	355.0	-16.4	467,999.26	644,742.33	32° 17' 8.801 N	103° 51' 53.850 W	
9,950.0	78.18	357.36	9,765.8	379.3	-17.5	468,023.56	644,741.21	32° 17' 9.041 N	103° 51' 53.862 W	
9,975.0	81.18	357.36	9,770.3	403.8	-18.6	468,048.13	644,740.08	32° 17' 9.284 N	103° 51' 53.874 W	
10,000.0	84.18	357.36	9,773.5	428.6	-19.8	468,072.89	644,738.94	32° 17' 9.529 N	103° 51' 53.886 W	
10,025.0	87.18	357.36	9,775.4	453.5	-20.9	468,097.79	644,737.79	32° 17' 9.776 N	103° 51' 53.898 W	
10,049.5	90.12	357.36	9,776.0	478.0	-22.0	468,122.26	644,736.66	32° 17' 10.018 N	103° 51' 53.910 W	
<b>10049.6 MD LP</b>										
10,100.0	90.12	357.36	9,775.9	528.4	-24.4	468,172.70	644,734.34	32° 17' 10.517 N	103° 51' 53.934 W	
10,200.0	90.12	357.36	9,775.6	628.3	-29.0	468,272.60	644,729.73	32° 17' 11.506 N	103° 51' 53.983 W	
10,300.0	90.12	357.36	9,775.4	728.2	-33.6	468,372.49	644,725.12	32° 17' 12.495 N	103° 51' 54.032 W	
10,400.0	90.12	357.36	9,775.2	828.1	-38.2	468,472.38	644,720.51	32° 17' 13.484 N	103° 51' 54.080 W	
10,500.0	90.12	357.36	9,775.0	928.0	-42.8	468,572.28	644,715.91	32° 17' 14.472 N	103° 51' 54.129 W	
10,600.0	90.12	357.36	9,774.8	1,027.9	-47.4	468,672.17	644,711.30	32° 17' 15.461 N	103° 51' 54.177 W	
10,700.0	90.12	357.36	9,774.5	1,127.8	-52.0	468,772.07	644,706.69	32° 17' 16.450 N	103° 51' 54.226 W	
10,800.0	90.12	357.36	9,774.3	1,227.7	-56.6	468,871.96	644,702.09	32° 17' 17.438 N	103° 51' 54.274 W	
10,900.0	90.12	357.36	9,774.1	1,327.6	-61.2	468,971.85	644,697.48	32° 17' 18.427 N	103° 51' 54.323 W	
11,000.0	90.12	357.36	9,773.9	1,427.4	-65.8	469,071.75	644,692.87	32° 17' 19.416 N	103° 51' 54.372 W	
11,100.0	90.12	357.36	9,773.7	1,527.3	-70.4	469,171.64	644,688.27	32° 17' 20.405 N	103° 51' 54.420 W	
11,200.0	90.12	357.36	9,773.5	1,627.2	-75.0	469,271.53	644,683.66	32° 17' 21.393 N	103° 51' 54.469 W	
11,300.0	90.12	357.36	9,773.2	1,727.1	-79.7	469,371.43	644,679.05	32° 17' 22.382 N	103° 51' 54.517 W	
11,400.0	90.12	357.36	9,773.0	1,827.0	-84.3	469,471.32	644,674.45	32° 17' 23.371 N	103° 51' 54.566 W	
11,500.0	90.12	357.36	9,772.8	1,926.9	-88.9	469,571.21	644,669.84	32° 17' 24.360 N	103° 51' 54.615 W	
11,600.0	90.12	357.36	9,772.6	2,026.8	-93.5	469,671.11	644,665.23	32° 17' 25.348 N	103° 51' 54.663 W	
11,700.0	90.12	357.36	9,772.4	2,126.7	-98.1	469,771.00	644,660.63	32° 17' 26.337 N	103° 51' 54.712 W	
11,800.0	90.12	357.36	9,772.1	2,226.6	-102.7	469,870.89	644,656.02	32° 17' 27.326 N	103° 51' 54.760 W	
11,900.0	90.12	357.36	9,771.9	2,326.5	-107.3	469,970.79	644,651.41	32° 17' 28.315 N	103° 51' 54.809 W	
12,000.0	90.12	357.36	9,771.7	2,426.4	-111.9	470,070.68	644,646.80	32° 17' 29.303 N	103° 51' 54.858 W	
12,100.0	90.12	357.36	9,771.5	2,526.3	-116.5	470,170.58	644,642.20	32° 17' 30.292 N	103° 51' 54.906 W	
12,200.0	90.12	357.36	9,771.3	2,626.2	-121.1	470,270.47	644,637.59	32° 17' 31.281 N	103° 51' 54.955 W	
12,300.0	90.12	357.36	9,771.1	2,726.1	-125.7	470,370.36	644,632.98	32° 17' 32.270 N	103° 51' 55.003 W	
12,400.0	90.12	357.36	9,770.8	2,826.0	-130.3	470,470.26	644,628.38	32° 17' 33.258 N	103° 51' 55.052 W	
12,500.0	90.12	357.36	9,770.6	2,925.8	-134.9	470,570.15	644,623.77	32° 17' 34.247 N	103° 51' 55.100 W	
12,600.0	90.12	357.36	9,770.4	3,025.7	-139.5	470,670.04	644,619.16	32° 17' 35.236 N	103° 51' 55.149 W	
12,700.0	90.12	357.36	9,770.2	3,125.6	-144.1	470,769.94	644,614.56	32° 17' 36.225 N	103° 51' 55.198 W	
12,800.0	90.12	357.36	9,770.0	3,225.5	-148.8	470,869.83	644,609.95	32° 17' 37.213 N	103° 51' 55.246 W	
12,900.0	90.12	357.36	9,769.8	3,325.4	-153.4	470,969.72	644,605.34	32° 17' 38.202 N	103° 51' 55.295 W	
13,000.0	90.12	357.36	9,769.5	3,425.3	-158.0	471,069.62	644,600.74	32° 17' 39.191 N	103° 51' 55.343 W	
13,100.0	90.12	357.36	9,769.3	3,525.2	-162.6	471,169.51	644,596.13	32° 17' 40.180 N	103° 51' 55.392 W	
13,200.0	90.12	357.36	9,769.1	3,625.1	-167.2	471,269.40	644,591.52	32° 17' 41.168 N	103° 51' 55.441 W	
13,300.0	90.12	357.36	9,768.9	3,725.0	-171.8	471,369.30	644,586.91	32° 17' 42.157 N	103° 51' 55.489 W	
13,400.0	90.12	357.36	9,768.7	3,824.9	-176.4	471,469.19	644,582.31	32° 17' 43.146 N	103° 51' 55.538 W	
13,500.0	90.12	357.36	9,768.4	3,924.8	-181.0	471,569.09	644,577.70	32° 17' 44.134 N	103° 51' 55.586 W	



# Stryker Directional Planning Report - Geographic



<b>Database:</b>	EDM:5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well:Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 +20 @ 3281.0usft (Patterson #106)
<b>Project:</b>	Eddy County, New Mexico	<b>MD Reference:</b>	GL 3261 +20 @ 3281.0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,600.0	90.12	357.36	9,768.2	4,024.7	-185.6	471,668.98	644,573.09	32° 17' 45.123 N	103° 51' 55.635 W
13,700.0	90.12	357.36	9,768.0	4,124.6	-190.2	471,768.87	644,568.49	32° 17' 46.112 N	103° 51' 55.684 W
13,800.0	90.12	357.36	9,767.8	4,224.5	-194.8	471,868.77	644,563.88	32° 17' 47.101 N	103° 51' 55.732 W
13,900.0	90.12	357.36	9,767.6	4,324.4	-199.4	471,968.66	644,559.27	32° 17' 48.089 N	103° 51' 55.781 W
14,000.0	90.12	357.36	9,767.4	4,424.3	-204.0	472,068.55	644,554.67	32° 17' 49.078 N	103° 51' 55.829 W
14,100.0	90.12	357.36	9,767.1	4,524.1	-208.6	472,168.45	644,550.06	32° 17' 50.067 N	103° 51' 55.878 W
14,200.0	90.12	357.36	9,766.9	4,624.0	-213.3	472,268.34	644,545.45	32° 17' 51.056 N	103° 51' 55.927 W
14,300.0	90.12	357.36	9,766.7	4,723.9	-217.9	472,368.23	644,540.85	32° 17' 52.044 N	103° 51' 55.975 W
14,400.0	90.12	357.36	9,766.5	4,823.8	-222.5	472,468.13	644,536.24	32° 17' 53.033 N	103° 51' 56.024 W
14,500.0	90.12	357.36	9,766.3	4,923.7	-227.1	472,568.02	644,531.63	32° 17' 54.022 N	103° 51' 56.072 W
14,600.0	90.12	357.36	9,766.0	5,023.6	-231.7	472,667.92	644,527.03	32° 17' 55.011 N	103° 51' 56.121 W
14,700.0	90.12	357.36	9,765.8	5,123.5	-236.3	472,767.81	644,522.42	32° 17' 55.999 N	103° 51' 56.170 W
14,800.0	90.12	357.36	9,765.6	5,223.4	-240.9	472,867.70	644,517.81	32° 17' 56.988 N	103° 51' 56.218 W
14,900.0	90.12	357.36	9,765.4	5,323.3	-245.5	472,967.60	644,513.20	32° 17' 57.977 N	103° 51' 56.267 W
15,000.0	90.12	357.36	9,765.2	5,423.2	-250.1	473,067.49	644,508.60	32° 17' 58.966 N	103° 51' 56.315 W
15,100.0	90.12	357.36	9,765.0	5,523.1	-254.7	473,167.38	644,503.99	32° 17' 59.954 N	103° 51' 56.364 W
15,200.0	90.12	357.36	9,764.7	5,623.0	-259.3	473,267.28	644,499.38	32° 18' 0.943 N	103° 51' 56.413 W
15,300.0	90.12	357.36	9,764.5	5,722.9	-263.9	473,367.17	644,494.78	32° 18' 1.932 N	103° 51' 56.461 W
15,400.0	90.12	357.36	9,764.3	5,822.8	-268.5	473,467.06	644,490.17	32° 18' 2.921 N	103° 51' 56.510 W
15,500.0	90.12	357.36	9,764.1	5,922.7	-273.1	473,566.96	644,485.56	32° 18' 3.909 N	103° 51' 56.558 W
15,600.0	90.12	357.36	9,763.9	6,022.6	-277.7	473,666.85	644,480.96	32° 18' 4.898 N	103° 51' 56.607 W
15,700.0	90.12	357.36	9,763.6	6,122.4	-282.4	473,766.74	644,476.35	32° 18' 5.887 N	103° 51' 56.656 W
15,800.0	90.12	357.36	9,763.4	6,222.3	-287.0	473,866.64	644,471.74	32° 18' 6.875 N	103° 51' 56.704 W
15,900.0	90.12	357.36	9,763.2	6,322.2	-291.6	473,966.53	644,467.14	32° 18' 7.864 N	103° 51' 56.753 W
16,000.0	90.12	357.36	9,763.0	6,422.1	-296.2	474,066.43	644,462.53	32° 18' 8.853 N	103° 51' 56.801 W
16,100.0	90.12	357.36	9,762.8	6,522.0	-300.8	474,166.32	644,457.92	32° 18' 9.842 N	103° 51' 56.850 W
16,200.0	90.12	357.36	9,762.6	6,621.9	-305.4	474,266.21	644,453.32	32° 18' 10.830 N	103° 51' 56.899 W
16,300.0	90.12	357.36	9,762.3	6,721.8	-310.0	474,366.11	644,448.71	32° 18' 11.819 N	103° 51' 56.947 W
16,400.0	90.12	357.36	9,762.1	6,821.7	-314.6	474,466.00	644,444.10	32° 18' 12.808 N	103° 51' 56.996 W
16,500.0	90.12	357.36	9,761.9	6,921.6	-319.2	474,565.89	644,439.49	32° 18' 13.797 N	103° 51' 57.044 W
16,600.0	90.12	357.36	9,761.7	7,021.5	-323.8	474,665.79	644,434.89	32° 18' 14.785 N	103° 51' 57.093 W
16,700.0	90.12	357.36	9,761.5	7,121.4	-328.4	474,765.68	644,430.28	32° 18' 15.774 N	103° 51' 57.142 W
16,800.0	90.12	357.36	9,761.3	7,221.3	-333.0	474,865.57	644,425.67	32° 18' 16.763 N	103° 51' 57.190 W
16,900.0	90.12	357.36	9,761.0	7,321.2	-337.6	474,965.47	644,421.07	32° 18' 17.752 N	103° 51' 57.239 W
17,000.0	90.12	357.36	9,760.8	7,421.1	-342.2	475,065.36	644,416.46	32° 18' 18.740 N	103° 51' 57.287 W
17,100.0	90.12	357.36	9,760.6	7,521.0	-346.9	475,165.25	644,411.85	32° 18' 19.729 N	103° 51' 57.336 W
17,200.0	90.12	357.36	9,760.4	7,620.8	-351.5	475,265.15	644,407.25	32° 18' 20.718 N	103° 51' 57.385 W
17,300.0	90.12	357.36	9,760.2	7,720.7	-356.1	475,365.04	644,402.64	32° 18' 21.707 N	103° 51' 57.433 W
17,400.0	90.12	357.36	9,759.9	7,820.6	-360.7	475,464.94	644,398.03	32° 18' 22.695 N	103° 51' 57.482 W
17,500.0	90.12	357.36	9,759.7	7,920.5	-365.3	475,564.83	644,393.43	32° 18' 23.684 N	103° 51' 57.530 W
17,600.0	90.12	357.36	9,759.5	8,020.4	-369.9	475,664.72	644,388.82	32° 18' 24.673 N	103° 51' 57.579 W
17,700.0	90.12	357.36	9,759.3	8,120.3	-374.5	475,764.62	644,384.21	32° 18' 25.662 N	103° 51' 57.628 W
17,800.0	90.12	357.36	9,759.1	8,220.2	-379.1	475,864.51	644,379.60	32° 18' 26.650 N	103° 51' 57.676 W
17,900.0	90.12	357.36	9,758.9	8,320.1	-383.7	475,964.40	644,375.00	32° 18' 27.639 N	103° 51' 57.725 W
18,000.0	90.12	357.36	9,758.6	8,420.0	-388.3	476,064.30	644,370.39	32° 18' 28.628 N	103° 51' 57.773 W
18,100.0	90.12	357.36	9,758.4	8,519.9	-392.9	476,164.19	644,365.78	32° 18' 29.616 N	103° 51' 57.822 W
18,200.0	90.12	357.36	9,758.2	8,619.8	-397.5	476,264.08	644,361.18	32° 18' 30.605 N	103° 51' 57.871 W
18,300.0	90.12	357.36	9,758.0	8,719.7	-402.1	476,363.98	644,356.57	32° 18' 31.594 N	103° 51' 57.919 W
18,400.0	90.12	357.36	9,757.8	8,819.6	-406.7	476,463.87	644,351.96	32° 18' 32.583 N	103° 51' 57.968 W
18,500.0	90.12	357.36	9,757.5	8,919.5	-411.3	476,563.77	644,347.36	32° 18' 33.571 N	103° 51' 58.016 W
18,600.0	90.12	357.36	9,757.3	9,019.4	-416.0	476,663.66	644,342.75	32° 18' 34.560 N	103° 51' 58.065 W
18,700.0	90.12	357.36	9,757.1	9,119.3	-420.6	476,763.55	644,338.14	32° 18' 35.549 N	103° 51' 58.114 W
18,800.0	90.12	357.36	9,756.9	9,219.2	-425.2	476,863.45	644,333.54	32° 18' 36.538 N	103° 51' 58.162 W
18,900.0	90.12	357.36	9,756.7	9,319.0	-429.8	476,963.34	644,328.93	32° 18' 37.526 N	103° 51' 58.211 W



# Stryker Directional Planning Report - Geographic



<b>Database:</b>	EDM:5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well:Forty Niner ridge Unit #103H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	GL 3261 +20 @ 3281.0usft (Patterson #106)
<b>Project:</b>	Eddy County New Mexico	<b>MD Reference:</b>	GL 3261 +20 @ 3281.0usft (Patterson #106)
<b>Site:</b>	Section 22/15-23S-30E Forty Niner Ridge Unit #103	<b>North Reference:</b>	Grid
<b>Well:</b>	Forty Niner ridge Unit #103H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	Plan#1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
19,000.0	90.12	357.36	9,756.5	9,418.9	-434.4	477,063.23	644,324.32	32° 18' 38.515 N	103° 51' 58.259 W	
19,100.0	90.12	357.36	9,756.2	9,518.8	-439.0	477,163.13	644,319.72	32° 18' 39.504 N	103° 51' 58.308 W	
19,208.9	90.12	357.36	9,756.0	9,627.6	-444.0	477,271.91	644,314.70	32° 18' 40.581 N	103° 51' 58.361 W	
19208.9 MD PBHL										

Design Targets										
Target Name	hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL 49er Ridge Unit	- plan hits target center	0.00	0.00	9,756.0	9,627.6	-444.0	477,271.95	644,314.70	32° 18' 40.581 N	103° 51' 58.361 W
	- Point									
Lp 49er Ridge Unit #1	- plan misses target center by 1.2usft at 10049.5usft MD (9776.0 TVD, 477.9 N, -22.0 E)	0.00	0.00	9,776.0	478.0	-20.8	468,122.28	644,737.88	32° 17' 10.018 N	103° 51' 53.896 W
	- Point									

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
9,298.5	9,298.5	0.0	0.0	9298.5' MD KOP	
10,049.5	9,776.0	478.0	-22.0	10049.5' MD LP	
19,208.9	9,756.0	9,627.6	-444.0	19208.9' MD PBHL	



COMPANY: Mewbourne Oil Company  
 WELL: Forty Niner ridge Unit #103H  
 COUNTY: Eddy County, New Mexico  
 DATUM: NAD 1927 (NADCON CONUS)  
 RIG: Patterson #106



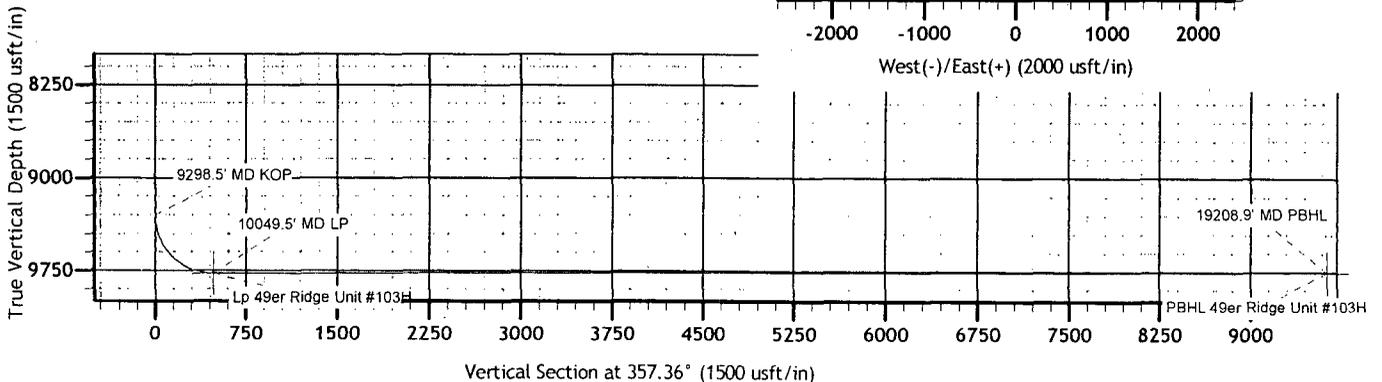
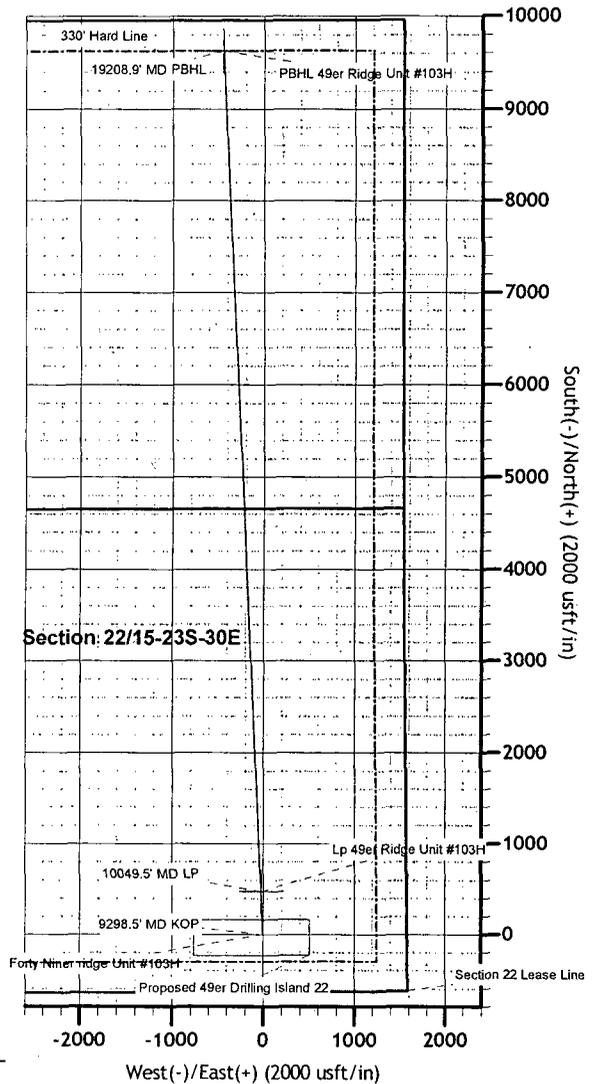
GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 7.14°

GEODETTIC ZONE: New Mexico East 3001						
GL 3261 + 20 @ 3281.0usft (Patterson #106)						
GROUND ELEVATION: 3261.0						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	467644.30	644758.70	32° 17' 5.287 N	103° 51' 53.677 W	

PLAN SECTIONS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	9298.5	0.00	0.00	9298.5	0.0	0.0	0.00	0.00	0.0	
3	10049.5	90.12	357.36	9776.0	478.0	-22.0	12.00	357.36	478.5	
4	19208.9	90.12	357.36	9756.0	9627.6	-444.0	0.00	0.00	9637.9	PBHL 49er Ridge Unit #103H

Azimuths to Grid North  
 True North: -0.25°  
 Magnetic North: 7.14°

Magnetic Field  
 Strength: 48352.7snT  
 Dip Angle: 60.13°  
 Date: 2/24/2014  
 Model: IGRF2010



# 13 5/8" 2M BOPE & Closed Loop Equipment Schematic

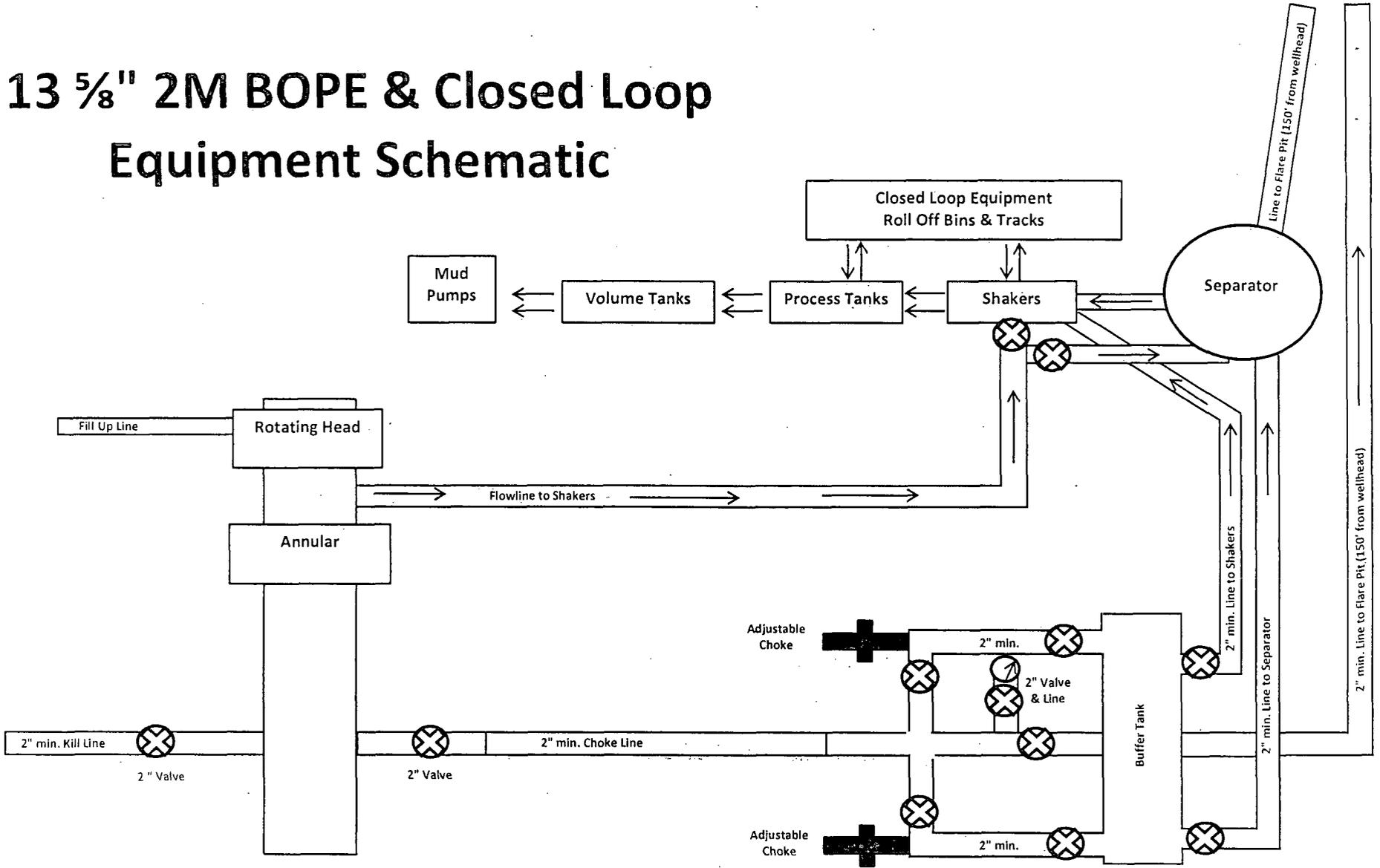
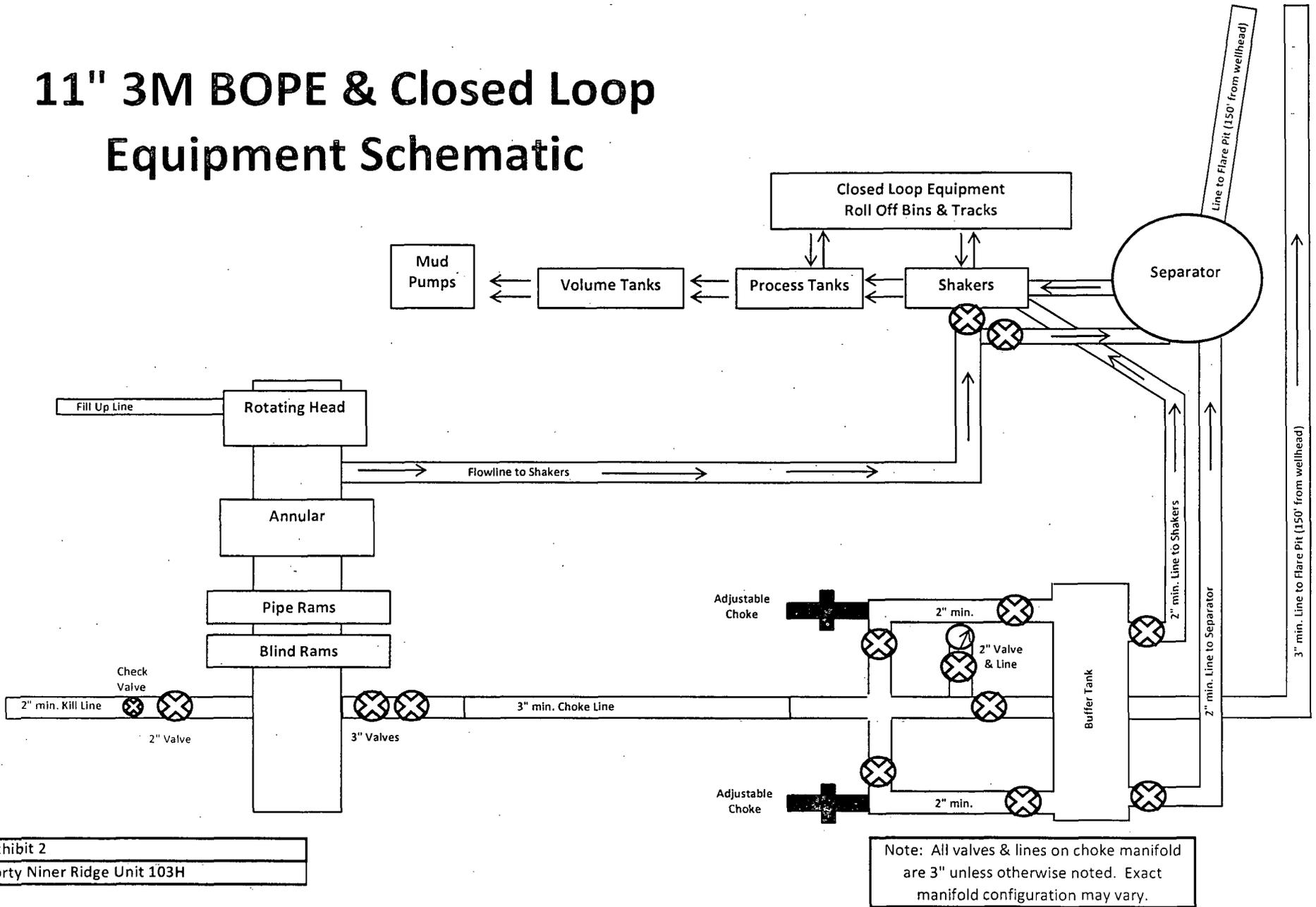


Exhibit 2A  
Forty Niner Ridge Unit 103H

# 11" 3M BOPE & Closed Loop Equipment Schematic



**Notes Regarding Blowout Preventer**

**Mewbourne Oil Company**

Forty Niner Ridge Unit 103H

660' FSL & 1584' FEL (SHL)

Sec 22-T23S-R30E

Eddy County

- I. Drilling nipple (bell nipple) to be constructed so that it can be removed without the use of a welder through the opening of the rotary table, with minimum internal diameter equal to blowout preventer bore.
- II. Blowout preventer and all fittings must be in good condition with a minimum 3000 psi working pressure on 9 5/8" and 7" casing.
- III. Safety valve must be available on the rig floor at all times with proper connections to install in the drill string. Valve must be full bore with minimum 3000 psi working pressure.
- IV. Equipment through which bit must pass shall be at least as large as internal diameter of the casing.
- V. A kelly cock shall be installed on the kelly at all times.

Blowout preventer closing equipment to include and accumulator of at least 40 gallon capacity, two independent sources of pressure on closing unit, and meet all other API specifications.

**Forty-Niner Ridge — Plan of Development**

**Section 22 T23S R30E, Eddy Co. NM**

**Mewbourne Oil Company**

**Bradley Bishop**

**03/20/2014**

**Surface Use Plan of Operations  
Forty-Niner Ridge Plan of Development  
Sec. 22 T23S R30E  
Eddy County, NM**

**Wells in the POD/Drill Island:**

**49er Ridge Unit Section 22 Surface Locations**

22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	22/15 SE 12/15 SE 600 FSL & 2175 FLL	22/15 SW 12/15 SW 600 FSL & 2175 FLL	22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	22/15 SE 12/15 SE 600 FSL & 2175 FLL	22/15 SW 12/15 SW 600 FSL & 2175 FLL	22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	22/15 SE 12/15 SE 600 FSL & 2175 FLL	22/15 SW 12/15 SW 600 FSL & 2175 FLL
22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	22/15 SE 12/15 SE 600 FSL & 2175 FLL	22/15 SW 12/15 SW 600 FSL & 2175 FLL	22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	22/15 SE 12/15 SE 600 FSL & 2175 FLL	22/15 SW 12/15 SW 600 FSL & 2175 FLL	22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	22/15 SE 12/15 SE 600 FSL & 2175 FLL	22/15 SW 12/15 SW 600 FSL & 2175 FLL
22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	AR Location 570 FSL & 2005 FLL	22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	AR Location 570 FSL & 1750 FLL	AR Location 570 FSL & 1665 FLL	22/15 NE 12/15 NE 600 FSL & 2175 FLL	22/15 NW 12/15 NW 600 FSL & 2175 FLL	AR Location 570 FSL & 1410 FLL	22/15 SE 12/15 SE 600 FSL & 2175 FLL	22/15 SW 12/15 SW 600 FSL & 2175 FLL

★ = proposed well site of Forty-Niner Ridge Unit #103H

**Master Existing Road map & directions:**

From the intersection of HWY 128 & Mobley Ranch Road, go south on Mobley Ranch Road for .6 mile to a "Y". Stay left and go SE approx. 2.9 miles to a road survey. Turn right and follow survey to this location. (Exhibit "A")

Existing roads will be maintained in a condition the same as or better than before operations begin. The maximum width of the driving surface will be 14 feet. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The road will be surfaced with rolled and compacted caliche. Mewbourne Oil Co. will cooperate with other operators in the maintenance of lease roads.

**New Road:**

Approximately 50' of new road will be required to access this drill island. (Exhibit "A"). New road will be maintained in a condition the same as or better than before operations begin. The maximum width of the driving surface will be 14 feet. The road will be crowned and ditched

with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The road will be surfaced with rolled and compacted caliche.

#### **Existing Wells:**

See Appendix "G" for one mile radius of existing wells in the area.

#### **Production Facilities:**

Flow lines will follow the route shown in Appendix "D". Approximately 51.57' of 2 7/8" steel flow line will be laid for each well to battery site. See Appendix "D" for flow line map.

Battery Site : the battery site for the POD will be in Sec. 22 T23S R30E (exhibit "E"). It will be a 400' x 300' caliche pad with 10 - 500 barrel tanks (6 steel oil tanks & 4 fiberglass water tanks). 2 separators & 1 heater treater per well will be installed as the wells are drilled.

#### **Location and Type of Water Supply**

The well will be drilled with a combination of fresh water and brine water based mud systems. The water will be obtained from commercial suppliers in the area and/or hauled to the location by transport trucks over existing and proposed roads as indicated in Exhibit "A".

#### **Source of Construction Materials**

All material required for construction of the drill pad and access roads will be obtained from private, state, or federal pits. The construction contractor will be solely responsible for securing construction materials required for this operation and paying any royalties that may be required on those materials.

#### **Methods of Handling Waste Disposal:**

Drill cuttings not retained for evaluation purposes will be hauled to a permitted off-site facility. MOC will utilize a closed loop system for drilling & completion of this well. Water produced during operations will be hauled to an off-site permitted SWD in the area. If any liquid hydrocarbons are produced during operations, those liquids will be stored in suitable tanks until sold. Sewage and gray water will be safely contained on-site, and then waste will be disposed at an approved off-site facility. All trash, junk, and other waste materials will be stored in proper containers to prevent dispersal and will be removed to an appropriate facility within one week of cessation of drilling and completion activities.

#### **Ancillary Facilities**

There are no ancillary facilities within the immediate vicinity of the proposed well site.

#### **Well Site Layout**

A diagram of the drill pad is shown in Appendix "B". Dimensions of the pad and location of major rig components are shown.

The pad dimension of 1270' x 400' has been staked and flagged.

MOC will only build a portion of the drill pad for the first wells to "test" the area. The Drill site for the first well will be 340' x 340'. (Shown in Exhibit "B") This location will be built to the finished elevation of the entire drill island, see cut/fill diagram for finished elevation. MOC will use material from the up-hill portion of the drill island to "fill" in where needed for the 340' x 340' location. This material will be taken from inside the 340' x 340' pad & 75' to the west of the 340' x 340' pad. Shown in exhibit "F". In order to excavate material, MOC will push topsoil off the area that will be used for fill material, excavate material needed, then re-contour and spread topsoil back over the area. After topsoil is spread, the area will be reseeded with the appropriate BLM seed mix. This re-contouring & reseeding will be immediately after the fill material is excavated. The re-contouring will be to a 3:1 slope.

#### **Plans for Restoration of Surface**

Within 90 days of cessation of drilling and completion operations of last proposed well, all equipment not necessary for production operations will be removed. The location will be cleaned of all trash and junk to assure the well site is left as aesthetically pleasing as reasonably possible.

##### **Interim reclamation:**

All areas not needed for production operations will be reclaimed. Caliche will be removed, the land will be recontoured, the top soil from stockpile will be spread over these areas. The disturbed area will be restored by re-seeding during the proper growing season.

##### **Final Reclamation:**

Upon cessation of the proposed operations, if the well is abandoned, all equipment and trash will be removed and taken to a proper facility. The location and road surfacing material will be removed and used to patch area lease roads. The entire location will be restored to the original contour as much as reasonable possible. The top soil used for interim reclamation will be spread over the entire location. All restoration work will be completed within 180 days of cessation of activities.

#### **Surface Ownership:**

BLM is surface owner for the drill island & the battery site.

#### **Other Information:**

The primary use of the surface at the location is for grazing of livestock.

#### **Operators Representative:**

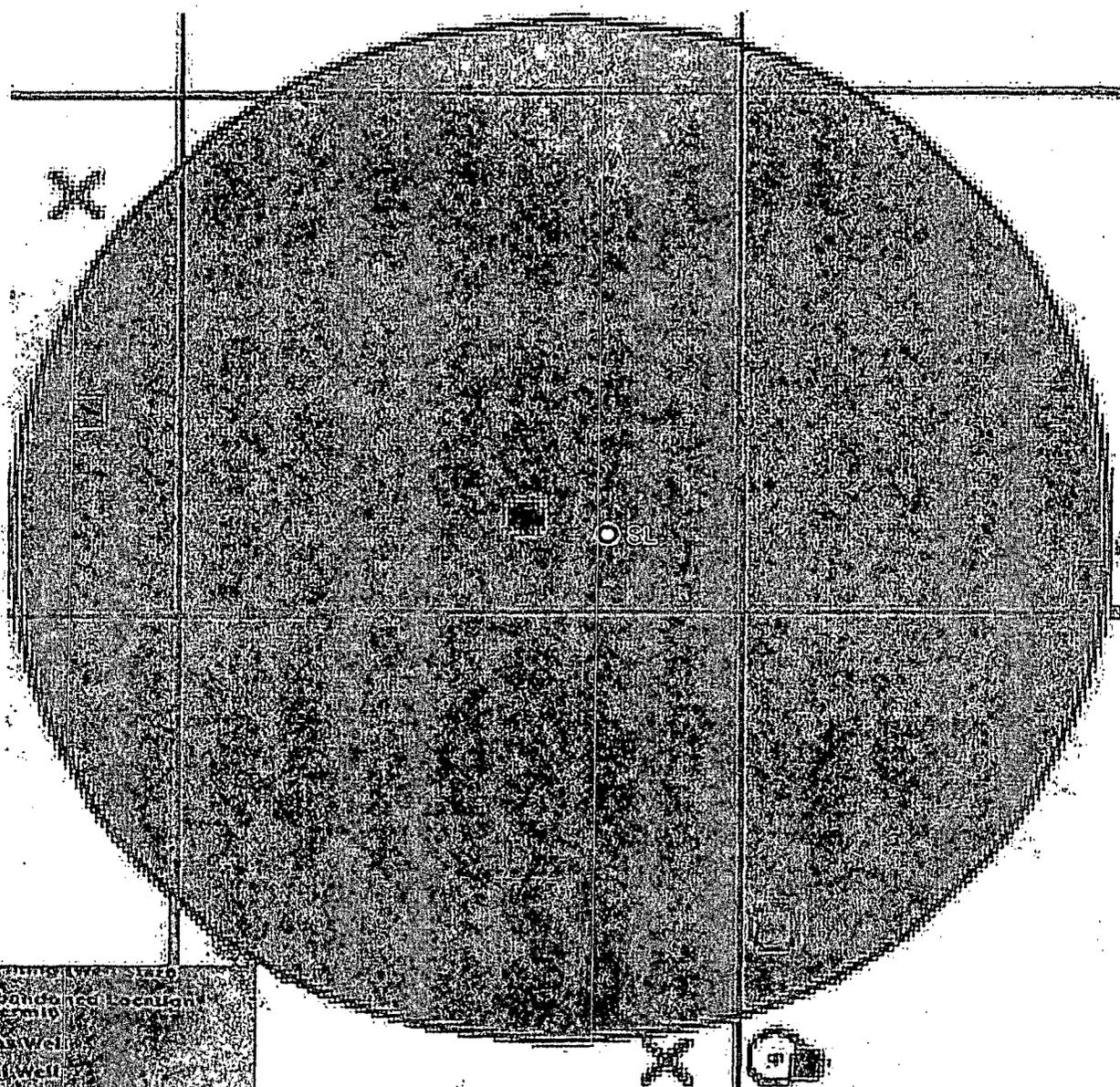
Through APD approval, drilling, completion and production operations:

**N.M. Young, District Manager**

Mewbourne Oil Company

PO Box 5270, Hobbs, NM 88241, 575-393-5905

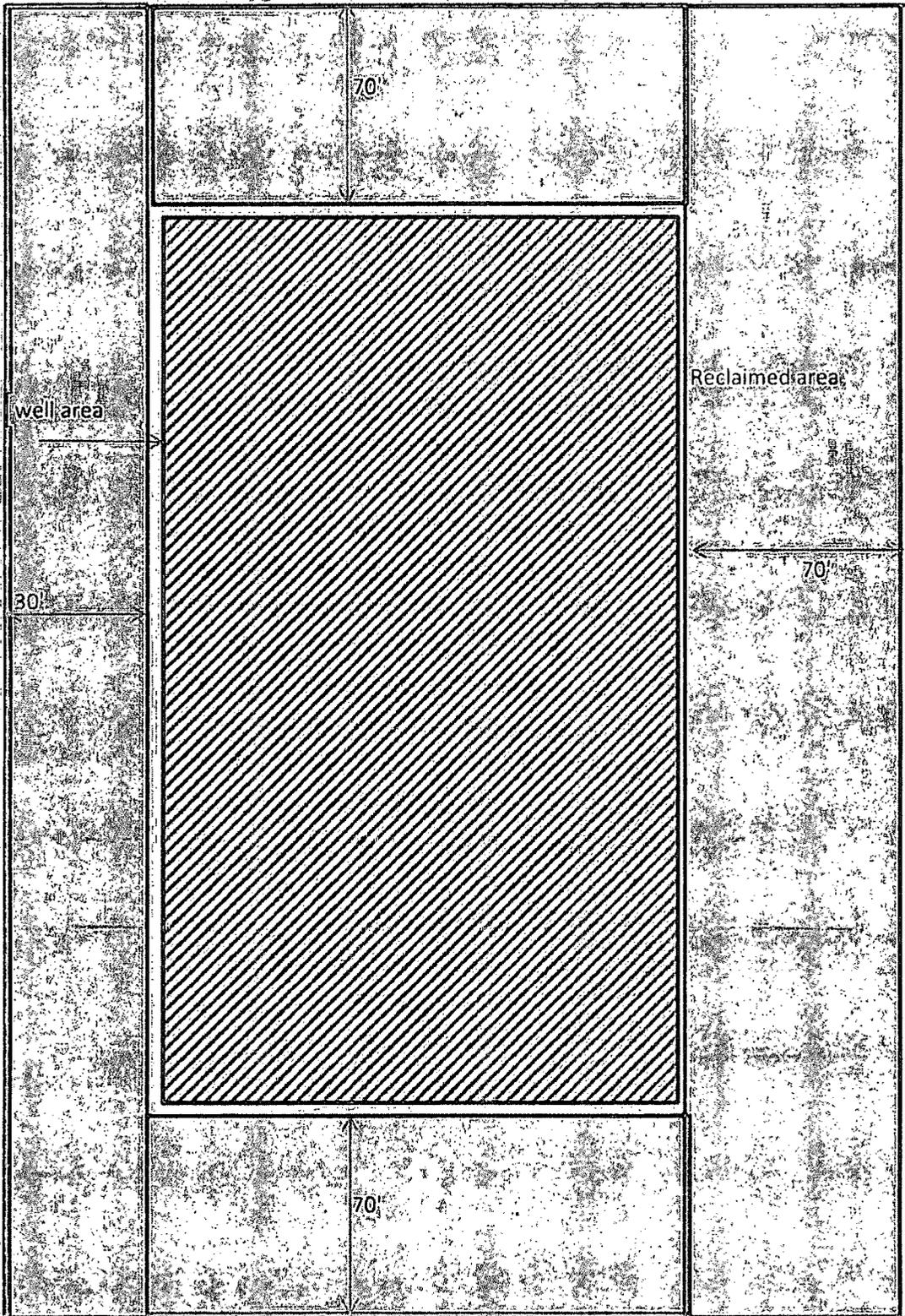
6



- Drilling Well
- Abandoned Location (Permit)
- Gas Well
- Oil Well
- Oil and Gas Well
- OILies (Observation, etc)
- Intention Well
- Suspended
- Plugged Gas Well
- Plugged Oil Well
- Plugged Oil and Gas
- Dry Hole (No Shows)
- Dry Hole w/ Gas Show
- Dry Hole w/ Oil Show
- Dry Hole w/ Oil and Gas Show

Surface Location  
Forty Niner Ridge Unit 103H  
Sec 22 T23S R29E

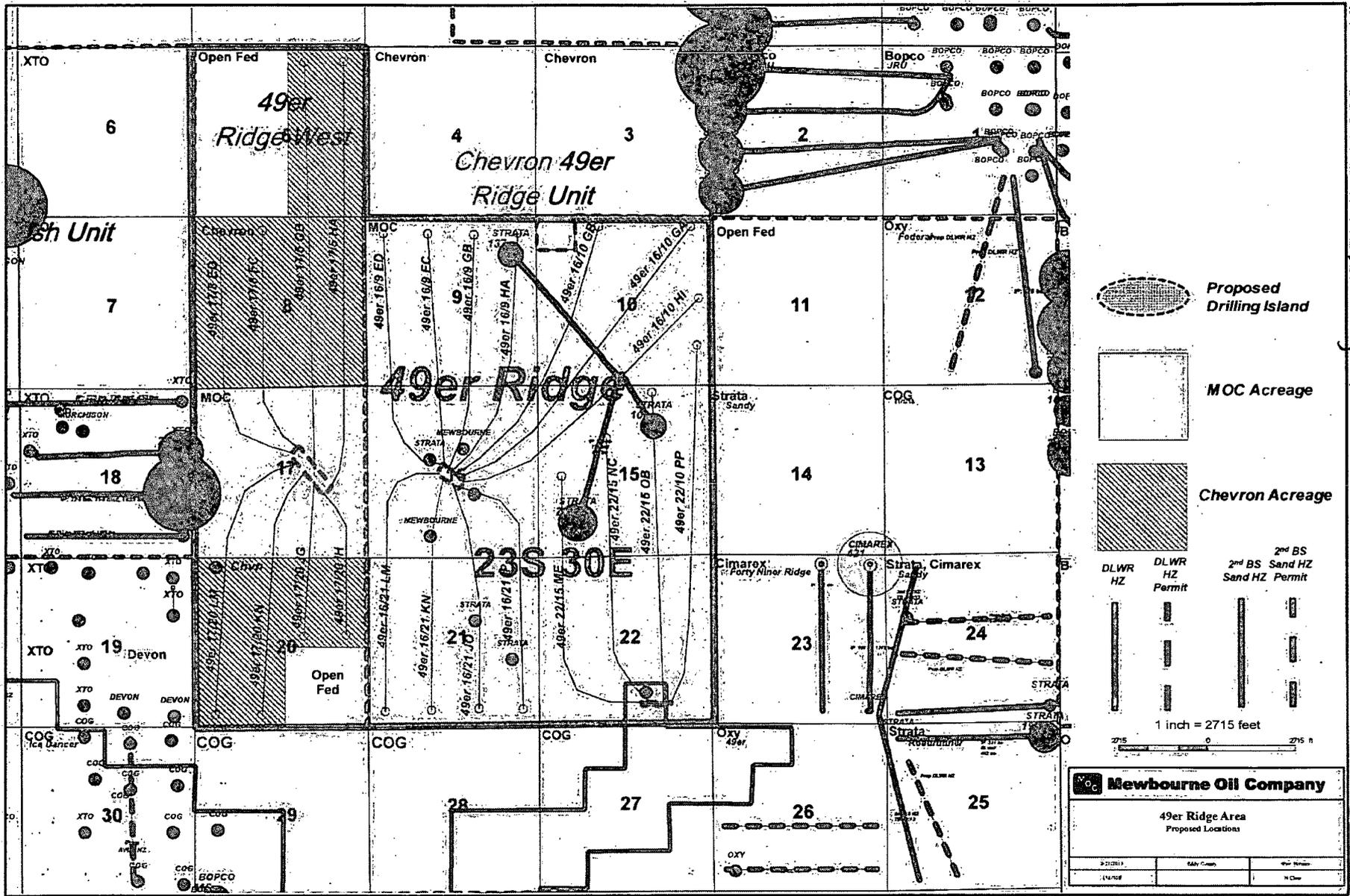
Reclaimed area for drilling island



Forty Niner Ridge Unit #103H  
630' FSL & 1584' FEL  
Sec. 22 T23S R30E  
Eddy Co. NM

← North

Drilling Plan Overview



H2S Diagram  
 Closed Loop Pad Dimensions 340' x 340'

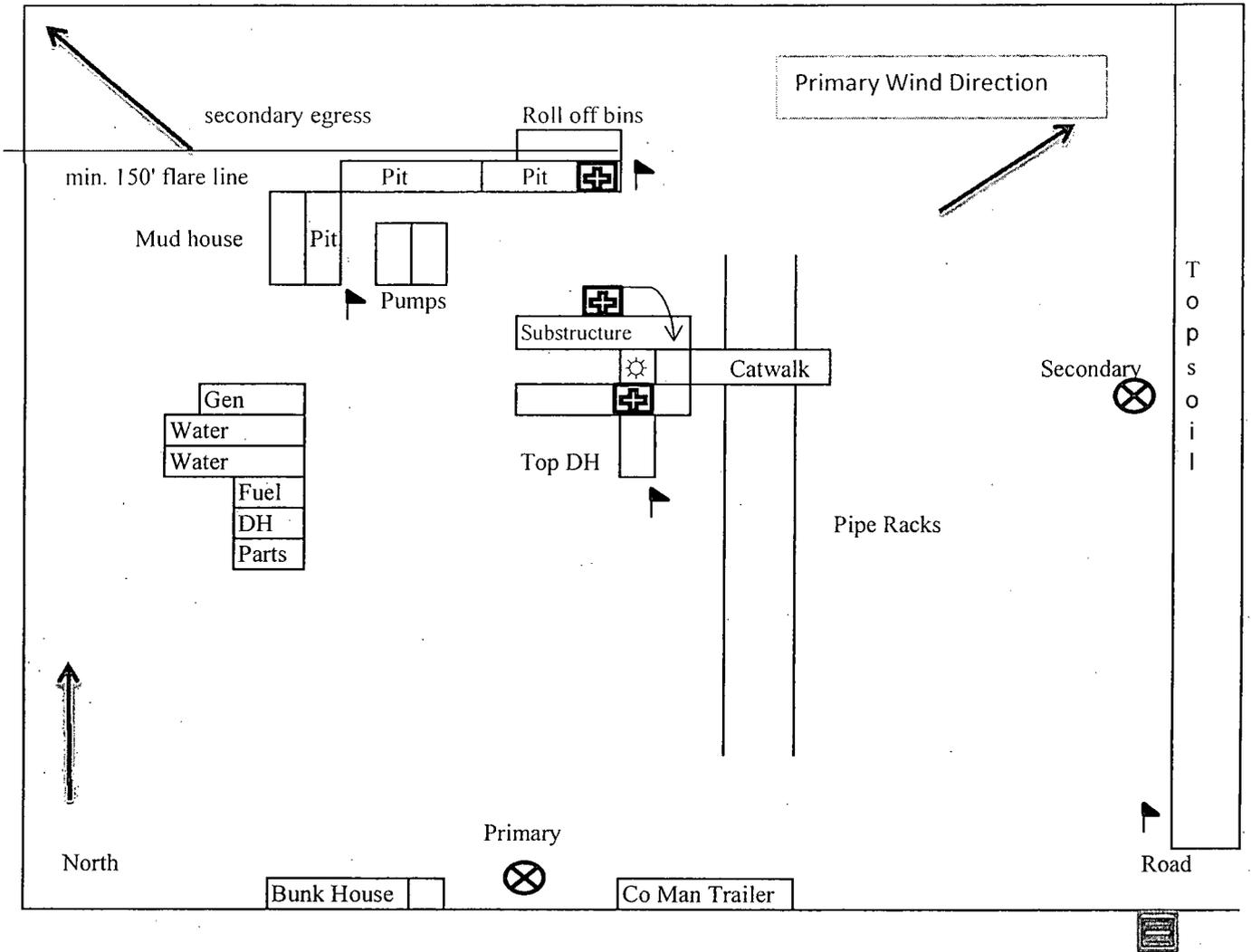


Exhibit 6

Mewbourne Oil Company  
 Forty Niner Ridge Unit #103H  
 630' FSL & 1584' FEL  
 Sec. 22 T23S R30E  
 Eddy County, NM

-  = Warning Signs
-  = Wind Markers
-  = H2S Monitors
-  = Safety Stations

Hydrogen Sulfide Drilling Operations Plan  
**Mewbourne Oil Company**  
Forty Niner Ridge Unit 103H  
630' FSL & 1584' FEL (SHL)  
Sec 22-T23S-R30E  
Eddy County, NM

**1. General Requirements**

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H<sub>2</sub>S were found. MOC will have on location and working all H<sub>2</sub>S safety equipment before the Delaware formation for purposes of safety and insurance requirements.

**2. Hydrogen Sulfide Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

1. The hazards and characteristics of hydrogen sulfide gas.
2. The proper use of personal protective equipment and life support systems.
3. The proper use of hydrogen sulfide detectors, alarms, warning systems, briefing areas, evacuation procedures.
4. The proper techniques for first aid and rescue operations.

Additionally, supervisory personnel will be trained in the following areas:

- 1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
- 2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
- 3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a known hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

**3. Hydrogen Sulfide Safety Equipment and Systems**

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the 9 5/8" intermediate casing.

1. Well Control Equipment

- A. Choke manifold with minimum of one adjustable choke/remote choke.
- B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- C. Auxiliary equipment including annular type blowout preventer.

2. Protective Equipment for Essential Personnel

Thirty minute self contained work unit located in the dog house and at briefing areas.

Additionally: If H<sub>2</sub>S is encountered in concentrations less than 10 ppm, fans will be placed in work areas to prevent the accumulation of hazardous amounts of poisonous gas. If higher concentrations of H<sub>2</sub>S are detected the well will be shut in MOC will follow Onshore Order 6 and install a rotating head, mud/gas separator, remote choke and flare line with igniter will be installed.

3. Hydrogen Sulfide Protection and Monitoring Equipment

Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 PPM.

4. Visual Warning Systems

A. Wind direction indicators as indicated on the wellsite diagram.

B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

4. **Mud Program**

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

5. **Metallurgy**

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

6. **Communications**

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

7. **Well Testing**

Drill stem testing is not an anticipated requirement for evaluation of this well. A drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

8. **Emergency Phone Numbers**

<b>Lea County Sheriff's Office</b>	<b>911 or 575-396-3611</b>
<b>Ambulance Service</b>	<b>911 or 575-885-2111</b>
<b>Carlsbad Fire Dept</b>	<b>911 or 575-885-2111</b>
<b>Closest Medical Facility - Columbia Medical Center of Carlsbad</b>	<b>575-492-5000</b>

<b>Mewbourne Oil Company</b>	<b>Hobbs District Office</b>	<b>575-393-5905</b>
	<b>Fax</b>	<b>575-397-6252</b>
	<b>2<sup>nd</sup> Fax</b>	<b>575-393-7259</b>

<b>District Manager</b>	<b>Robin Terrell</b>	<b>575-390-4816</b>
<b>Drilling Superintendent</b>	<b>Frosty Lathan</b>	<b>575-390-4103</b>
	<b>Bradley Bishop</b>	<b>575-390-6838</b>
<b>Drilling Foreman</b>	<b>Wesley Noseff</b>	<b>575-441-0729</b>

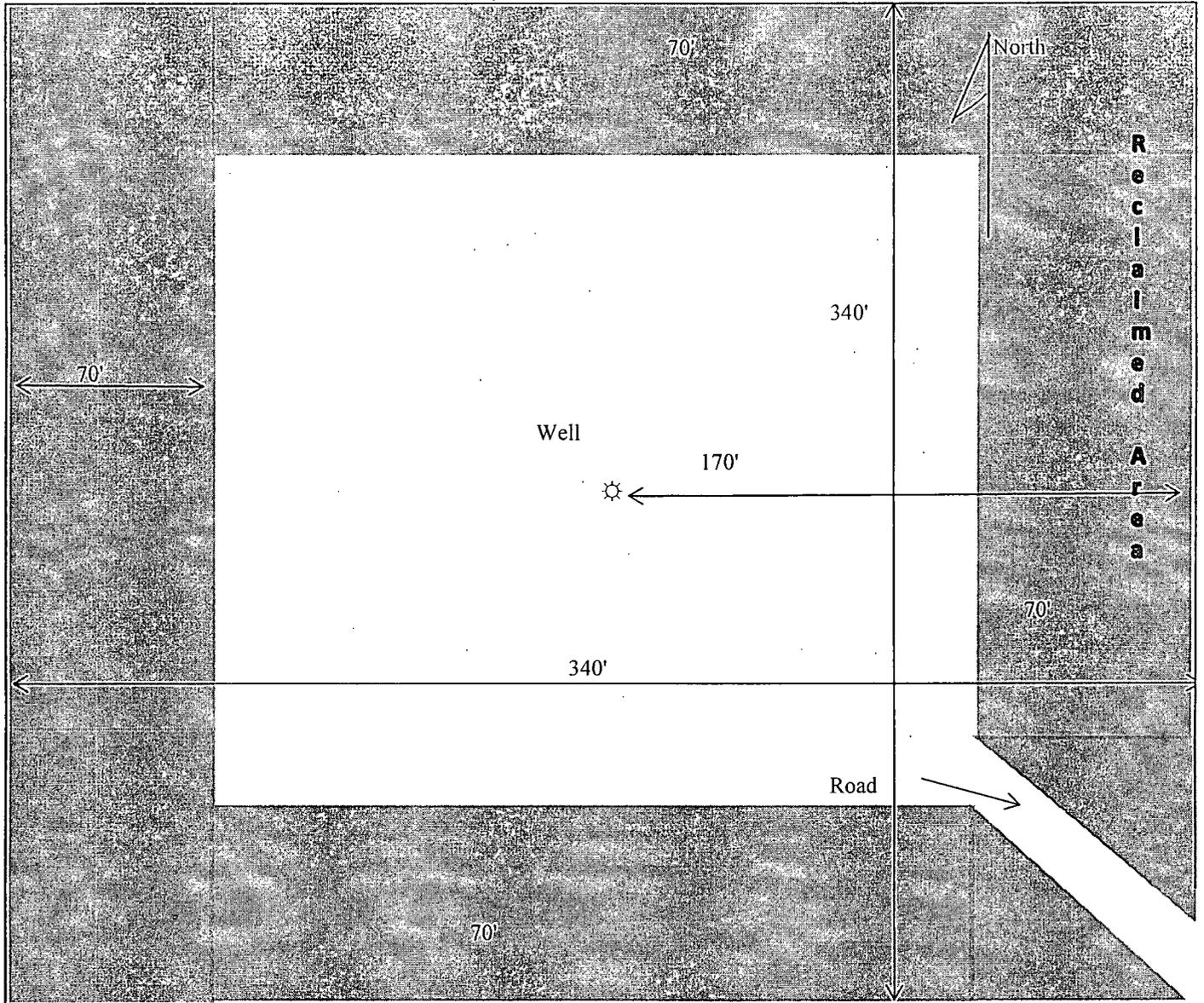


Exhibit 5

Mewbourne Oil Company  
 Forty Niner Ridge Unit #103H  
 630' FSL & 1584' FEL  
 Sec. 22 T23S R30E  
 Eddy Co. NM

## MULTI-POINT SURFACE USE AND OPERATIONS PLAN

### MEWBOURNE OIL COMPANY

Forty Niner Ridge Unit 103H

630' FSL & 1584' FEL (SHL)

Sec 22-T23S-R30E

Eddy County, NM

This plan is submitted with Form 3160-3, Application for Permit to Drill, Covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved, and the procedures to be followed in restoring the surface so that a complete appraisal can be made of the environmental impact associated with the proposed operations.

#### 1. Existing Roads:

- A. Exhibit #3 is a road map showing the location of the proposed well. Existing roads are highlighted in black. Exhibits #3-#3C are maps showing the location of the proposed well and access road. Existing and proposed roads are highlighted in black. (Vicinity Map)
- B. Directions to location: From the intersection of St Hwy 128 & CR-795 go south on CR 795 approx. .6 mile to a "Y". Stay left and go southeast approximately 2.9 miles to road survey. Turn right and follow road survey to this location. Survey road will become part of future pad
- C. Existing roads will be maintained in a condition the same as or better than before operations begin.

#### 2. Proposed Access Road:

- A. 390' of new road construction will be needed.
- B. The maximum width of the driving surface will be 14 feet. The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1 foot deep with 3:1 slopes. The road will be surfaced with 6" of rolled and compacted caliche.
- C. Mewbourne Oil Co. will cooperate with other operators in the maintenance of lease roads.

#### 3. Location of Existing Wells:

There are producing wells within the immediate vicinity of the well site. Exhibit #4 shows existing wells within a one mile radius.

#### 4. Location of Existing and/or Proposed Facilities:

- A. There are no production facilities on this lease at the present time.
- B. In the event that the well is productive, production facilities will be at the battery site for this drilling island. A 2 7/8" steel flowline will follow the route shown in Exhibit D. This will be a low pressure (under 150 #). MOC will only build a 200' x 200' test facility.
- C. All production vessels left on location will be painted to conform to BLM painting stipulations within 180 days of installation.

#### 5. Location and Type of Water Supply

The well will be drilled with a combination of fresh water and brine water based mud systems.

The water will be obtained from commercial suppliers in the area and/or hauled to the location by transport trucks over existing and proposed roads as indicated in Exhibit #3.

#### 6. Source of Construction Materials

All material required for construction of the drill pad and access roads will be obtained from private, state, or federal pits. The construction contractor will be solely responsible for securing construction materials required for this operation and paying any royalties that may be required on those materials.

#### 7. Methods of Handling Waste Disposal:

- A. Drill cuttings not retained for evaluation purposed will be hauled to an off-site permitted facility.
- B. Water produced during operations will be hauled to an off-site permitted SWD in the area.
- C. If any liquid hydrocarbons are produced during operations, those liquids will be stored in suitable tanks until sold.
- D. Sewage and gray water will be safely contained on-site, and then waste will be disposed at an approved off-site facility.
- E. All trash, junk, and other waste materials will be stored in proper containers to prevent dispersal and will be removed to an appropriate facility within one week of cessation of drilling and completion activities.
- F. MOC will utilize a closed-loop system during drilling operations.

#### 8. Ancillary Facilities

There are no ancillary facilities within the immediate vicinity of the proposed well site.

#### 9. Well Site Layout

- A. A diagram of the drill pad is shown in Exhibit #6. Dimensions of the pad and location of major rig components are shown.
- B. The pad dimension of 340' x 340' has been staked and flagged.
- C. MOC will only build a portion of the drill pad for the first wells to "test" the area. Drill site for the first well will be 340' x 340'. (Shown in Exhibit "3") This location will be built to the finished elevation of the entire drill island (3259.5' - GL), see cut/fill diagram for finished elevation. MOC will use material from the up-hill portion of the drill island to "fill" in where needed for the 340' x 340' location. This material will be taken from inside the 340' x 340' pad & 75' to the west of the 340' x 340' pad. Shown in exhibit "F". In order to excavate material, MOC will push topsoil off the area that will be used for fill material, excavate material needed, then re-contour and spread topsoil back over the area. After topsoil is spread, the area will be reseeded with the appropriate BLM seed mix. This re-contouring & reseeding will be immediately after the fill material is excavated. The re-contouring will be to a 3:1 slope.

## 10. Plans for Restoration of Surface

- A. Within 120 days of cessation of drilling and completion operations, all equipment not necessary for production operations will be removed. The location and surrounding area will be cleaned of all trash and junk to assure the well site is left as esthetically pleasing as reasonably possible.
- B. Interim reclamation:
  - i. All areas not needed for production operations will be reclaimed as shown in the interim reclamation layout, exhibit #5.
  - ii. In these areas, caliche will be removed, the land will be recontoured to match the surrounding area, the topsoil from the stockpile will be spread over these areas.
  - iii. The disturbed area will be restored by seeding during the proper growing season.
  - iv. Any additional caliche required for production facilities will be obtained from the reclaimed areas.
- C. Final Reclamation:
  - i. Upon cessation of the proposed operations, if the well is abandoned, all equipment and trash will be removed and taken to a proper facility.
  - ii. The location and road surfacing material will be removed and used to patch area lease roads.
  - iii. The entire location will be restored to the original contour as much as reasonable possible.
  - iv. The topsoil used for interim reclamation will be spread over the entire location.
  - v. The disturbed area will be restored by seeding during the proper growing season.
- B. All restoration work will be completed within 180 days of cessation of activities.

## 11. Surface Ownership:

The surface is owned by State of NM. Archaeology is being surveyed by Boone Arch Services. MOC has an oil & gas lease with State of NM.

## 12. Other Information:

- A. The primary use of the surface at the location is for grazing of livestock.

13. **Operators Representative:**

A. Through APD approval, drilling, completion and production operations:

**Robin Terrell, District Manager**  
Mewbourne Oil Company  
PO Box 5270  
Hobbs, NM 88241  
575-393-5905

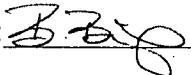
# Mewbourne Oil Company

PO Box 5270  
Hobbs, NM 88241  
(575) 393-5905

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 16 day of APRIL, 2014.

Name: Robin Terrell

Signature:  For ~~ROBIN~~ ROBIN TERRELL

Position Title: Hobbs District Manager

Address: PO Box 5270, Hobbs NM 88241

Telephone: 575-393-5905

E-mail: rterrell@mewbourne.com

## PECOS DISTRICT CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Mewbourne Oil Company
<b>LEASE NO.:</b>	NMNM-0543748
<b>WELL NAME &amp; NO.:</b>	Forty Niner Ridge Unit 103H
<b>SURFACE HOLE FOOTAGE:</b>	0630' FSL & 1584' FEL
<b>BOTTOM HOLE FOOTAGE:</b>	0330' FNL & 1980' FEL Sec. 15, T. 23 S., R 30 E.
<b>LOCATION:</b>	Section 22, T. 23 S., R 30 E., NMPM
<b>COUNTY:</b>	Eddy County, New Mexico

### TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
  - Pad Construction Requirements
  - Cave/Karst
  - Commercial Well Determination
  - Unit Well Sign Specs
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Drilling**
  - Cement Requirements
  - H2S Requirements
  - R-111-P-Potash
  - Medium Cave/Karst
  - Logging Requirements
  - Waste Material and Fluids
- Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
- Interim Reclamation**
- Final Abandonment & Reclamation**

## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

### **Pad Construction Requirements:**

The size of pad to be constructed for the proposed Forty Niner Ridge Unit #103H well with a closed loop system is a 340 x 340 foot surfaced well pad inside the dimensions of the planned drill island. The proposed Forty Niner Ridge Unit #103H well pad must be constructed to the elevation of 3259.5'. In order to accomplish this, Mewbourne is allowed to use mineral material from a 75' x 340' excavation area immediately west of the proposed well pad inside the drill island dimensions (See survey plat in APD).

First, Mewbourne must strip the available topsoil from the well pad area and stockpile it adjacent to the east side of the proposed well pad edge.

Then, Mewbourne must strip the available topsoil from the 75' x 340' excavation area west of the well pad and stockpile it west of the excavation area. Mineral material from this 75' x 340' area can be excavated and used to build up the pad to the final drill island elevation.

Immediately after construction, the excavation area must be reclaimed. Procedures for reclamation include: The excavation area must be contoured to match the surrounding topography (at least a 3:1 slope). After contouring, the topsoil west of the excavation area must be spread over the excavation area for seed preparation. The area must then be seeded with the proper seed mixture at the end of this COA document.

### **Cave/Karst Requirements:**

\*\* Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

#### **Construction:**

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

#### **No Blasting:**

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

#### **Pad Berming:**

The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).

- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

**Tank Battery Liners and Berms:**

Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

**Leak Detection System:**

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

**Automatic Shut-off Systems:**

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

**Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

**Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**Abandonment Cementing:**

Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

**Pressure Testing:**

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

**Drilling:**

**Commercial Well Determination**

A commercial well determination shall be submitted after production has been established for at least six months.

**Unit Wells**

The well sign for a unit well shall include the unit number in addition to the surface and bottom hole lease numbers. This also applies to participating area numbers. If a participating area has not been established, the operator can use the general unit designation, but will replace the unit number with the participating area number when the sign is replaced.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

### **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

### **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

### **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

### **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

### **F. EXCLOSURE FENCING (CELLARS & PITS)**

**Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

**G. ON LEASE ACCESS ROADS****Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

**Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**

Ditching shall be required on both sides of the road.

**Turnouts**

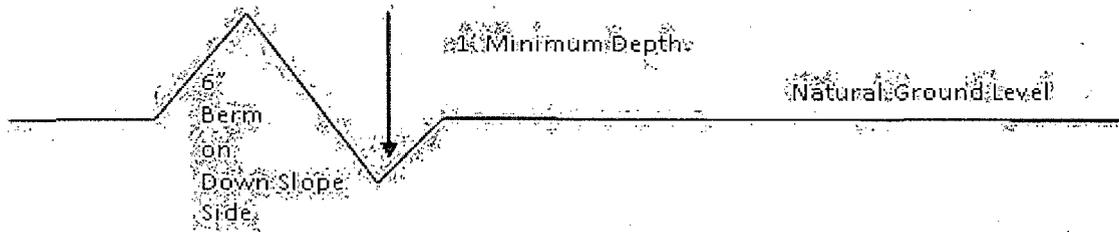
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill out-sloping and in-sloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

### Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

### Cattleguards

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguards that are in place and are utilized during lease operations.

### Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps**

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

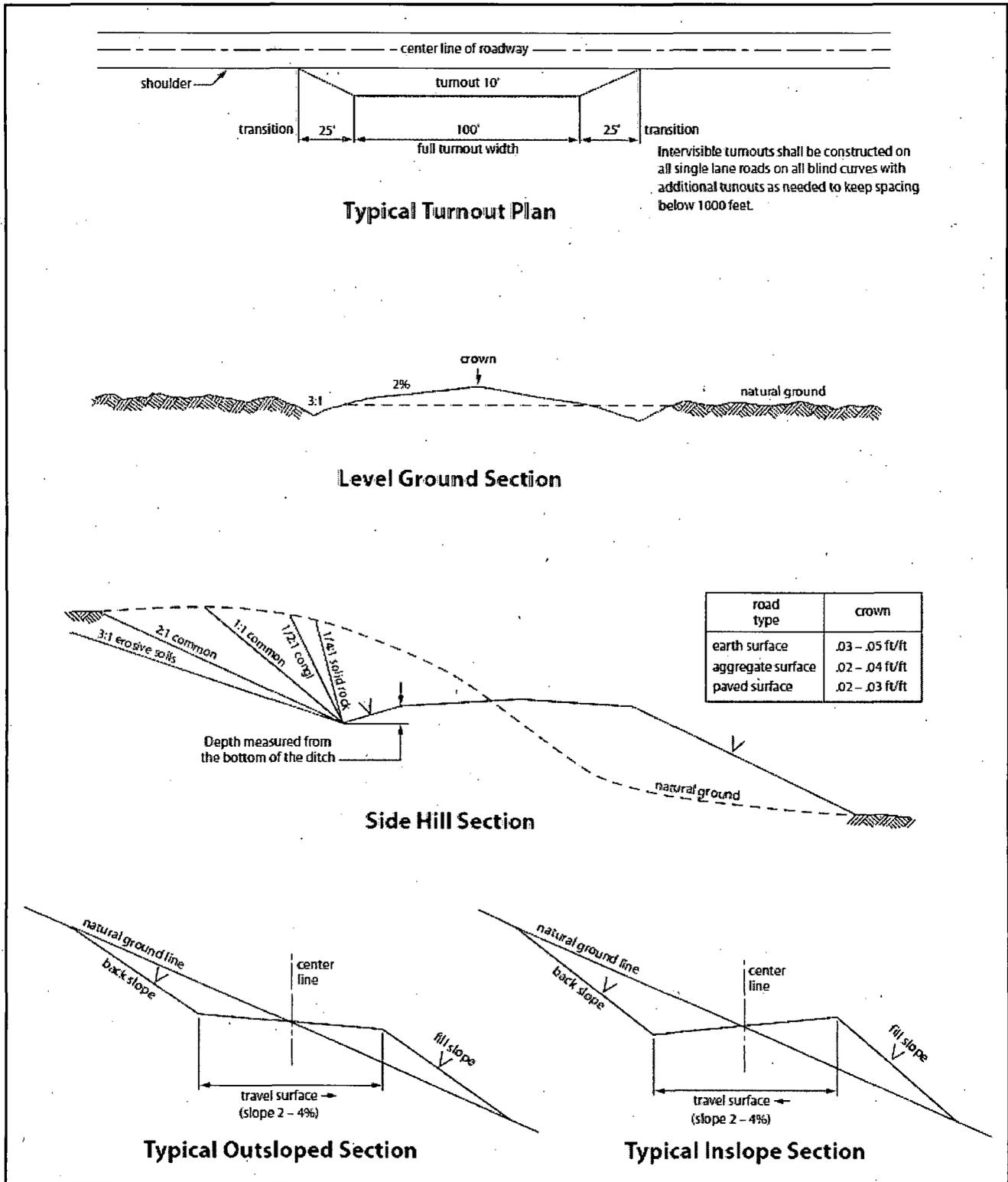


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

**Eddy County**

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

1. **Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

## **B. CASING**

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.**

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

### **R-111-P- Potash**

#### **Medium Cave/Karst**

**Possibility of water flows in the Salado and Castile.**

**Possibility of lost circulation in the Rustler and Delaware.**

1. The 13-3/8 inch surface casing shall be set at approximately **425** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
- Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst and potash. Excess calculates to 22% - Additional cement may be required.**

**Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Excess calculates to 20% - Additional cement may be required.**
4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
5. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

### **C. PRESSURE CONTROL**

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
- 2. **In the case where the only BOP installed is an annular preventer, it shall be tested to a minimum of 2000 psi (which may require upgrading to 3M or 5M annular).**
- 3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi.**

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8 intermediate casing shoe shall be **3000 (3M) psi**.
5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.
  - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
  - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - d. The results of the test shall be reported to the appropriate BLM office.
  - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
  - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

#### **D. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

## **E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**JAM 092314**

## VIII. PRODUCTION (POST DRILLING)

### A. WELL STRUCTURES & FACILITIES

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

#### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the

largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

## **B. PIPELINES**

### STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

**A copy of the application (Grant, Sundry Notice, APD) and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.**

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

- a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
- b. Activities of other parties including, but not limited to:
  - (1) Land clearing.
  - (2) Earth-disturbing and earth-moving work.
  - (3) Blasting.
  - (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will

be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

17. Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

## **IX. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **X. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed